ZOOLOGY OF EGYPT

THE FISHES OF THE NILE

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THE FISHES OF THE NILE.

BY

G. A. BOULENGER, F.R.S.

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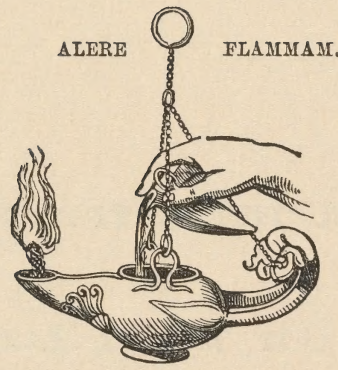

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From coloured sketches by Mr. Loat.

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From coloured sketches by Mr. Loat and Mr. Degen.

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All nat. size.

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Fig. 3. *Paratilapia prognatha*, Pellegr., p. 469. Kavirondo Bay, L. Victoria. (Type.)
Fig. 4. *Paratilapia cinerea*, Blgr., p. 478. Buganga, L. Victoria. (Type.)

All nat. size.

PLATE LXXXVII.

Fig. 1. *Paratilapia serranus*, Pfeff., p. 471. Lake Victoria. Nat. size.
Fig. 2. *Paratilapia guiarti*, Pellegr., p. 473. Entebbe, L. Victoria. $\frac{2}{3}$ nat. size.
Fig. 3. *Paratilapia victoriana*, Pellegr., p. 474. Bunjako, L. Victoria. $\frac{3}{4}$ nat. size.
Fig. 4. *Paratilapia granti*, Blgr., p. 476. Bunjako, L. Victoria. (Type.) Nat. size.
Fig. 5. *Paratilapia crassilabris*, Blgr., p. 482. Entebbe, L. Victoria. (Type.) Nat. size.

PLATE LXXXVIII.

Fig. 1. *Pelmatochromis cavifrons*, Hilg., p. 485. Buganga, L. Victoria. Nat. size.
Fig. 2. *Pelmatochromis spekii*, Blgr., p. 486. Bunjako, L. Victoria. (Type.) Nat. size. 2 *a*. Gill-cavity.

PLATE LXXXIX.

Fig. 1. *Paratilapia bicolor*, Blgr., p. 479. Bunjako, L. Victoria. (Type.) $\frac{3}{4}$ nat. size.
Fig. 2. *Paratilapia retrodens*, Hilg., p. 480. Bunjako, L. Victoria. $\frac{3}{4}$ nat. size.
Fig. 3. *Pelmatochromis flavipinnis*, Blgr., p. 488. Buganga, L. Victoria. (Type.) Nat. size.
Fig. 4. *Pelmatochromis microdon*, Blgr., p. 490. Bunjako, L. Victoria. (Type.) $\frac{3}{4}$ nat. size.
Fig. 5. *Pelmatochromis obesus*, Blgr., p. 491. Bunjako, L. Victoria. (Type.) $\frac{3}{4}$ nat. size.

PLATE XC.

Fig. 1. *Haplochromis percoides*, Blgr., p. 496. Entebbe, L. Victoria. (Type.)
Fig. 2. *Haplochromis strigigena*, Pfeff., p. 497. Alexandria.
Fig. 3. *Haplochromis desfontainesi*, Lacep., p. 501. Gondokoro. (Type of *Paratilapia wingatii*, Blgr.)
Fig. 4. *Haplochromis alluaudi*, Pellegr., p. 505. Kavirondo Bay, L. Victoria. (Type.)
Fig. 5. *Haplochromis stanleyi*, Blgr., p. 507. Buganga, L. Victoria. (Type.)
Fig. 6. *Haplochromis ishmaeli*, Blgr., p. 509. Entebbe, L. Victoria. (Type.)
Fig. 7. *Haplochromis nuchisquamulatus*, Hilg., p. 510. Entebbe, L. Victoria.
All nat. size.

PLATE XCI.

Fig. 1. *Platytæniodus degeni*, Blgr., p. 493. Bunjako, L. Victoria. (Type.)
Fig. 2. *Tilapia martini*, Blgr., p. 514. Bunjako, L. Victoria. (Type.)
Fig. 3. *Tilapia lacrimosa*, Blgr., p. 515. Bunjako, L. Victoria. (Type.)
Fig. 4. *Tilapia nubila*, Blgr., p. 517. Entebbe, L. Victoria. (Type.)
Fig. 5. *Tilapia nigricans*, Blgr., p. 518. Entebbe, L. Victoria. (Type.)
All nat. size.

PLATE XCII.

Tilapia zillii, Gerv., p. 519. Adult, with open mouth, Lake Menzaleh, and young, Giza. Nat. size.

PLATE XCIII.

Tilapia nilotica, L., p. 523. Cairo. $\frac{3}{4}$ nat. size.

PLATE XCIV.

Tilapia nilotica, L., p. 523. Skeleton. Nile. $\frac{5}{9}$ nat. size. *a*. Upper view of cranium; *b*. Upper pharyngeal bones; *c*, *d*. Lower pharyngeal bones, upper and lower views.

PLATE XCV.

Tilapia galilæa, Art., p. 531. Khartum. Nat. size.

PLATE XCVI.

Petrochromis andersonii, Blgr., p. 535. Lake Albert. (Type.) Nat. size.

PLATE XCVII.

Tetrodon fahaka, L., p. 544. Khartum. Nat. size. With front view of head.

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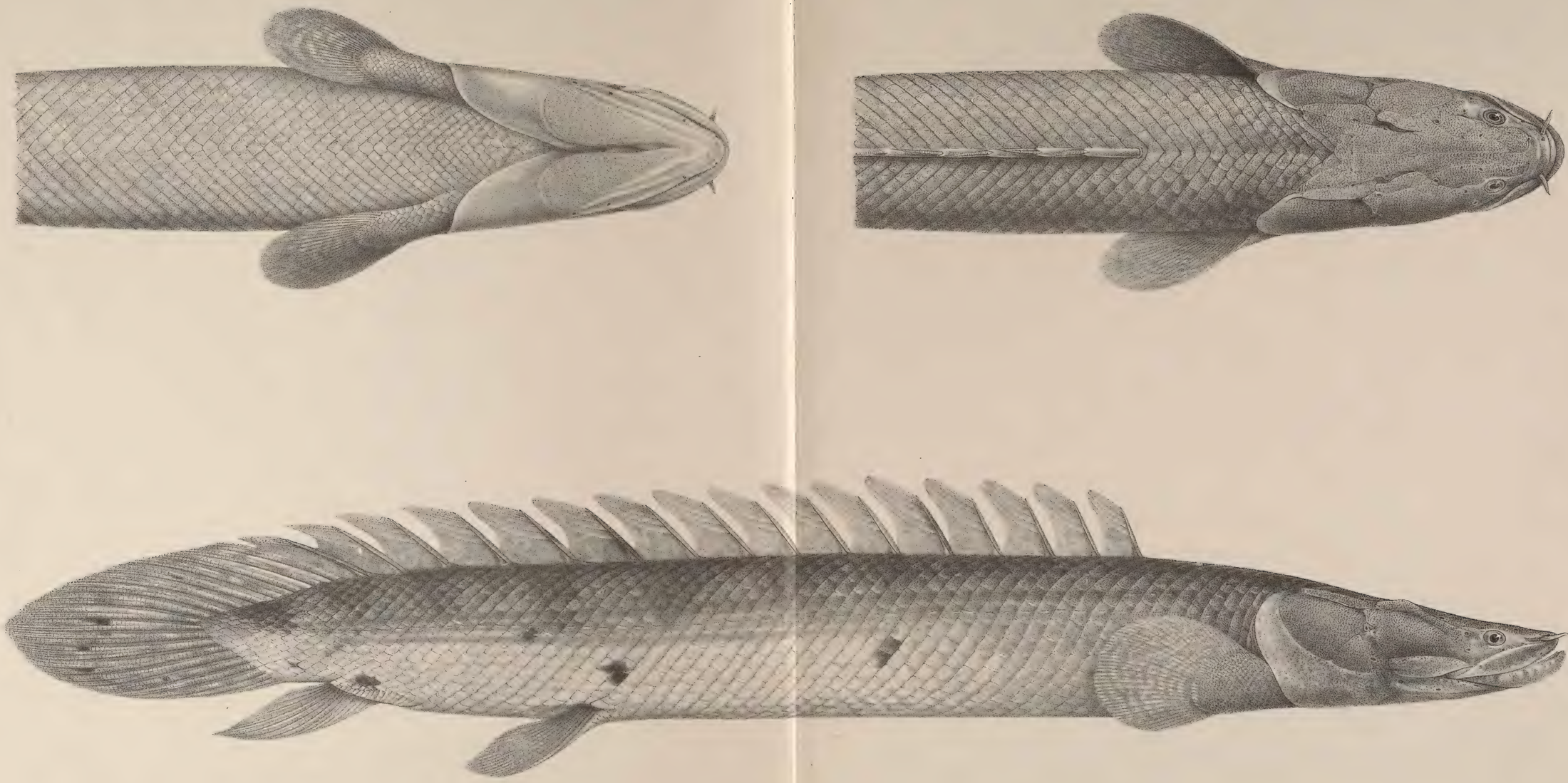
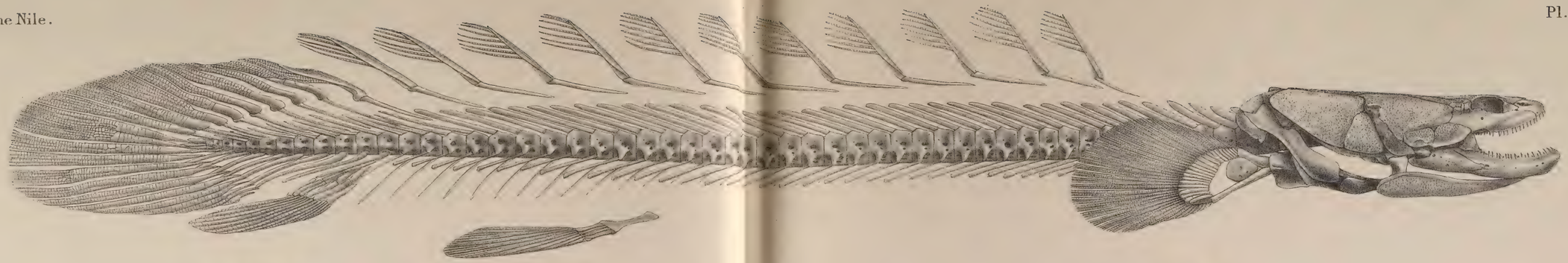
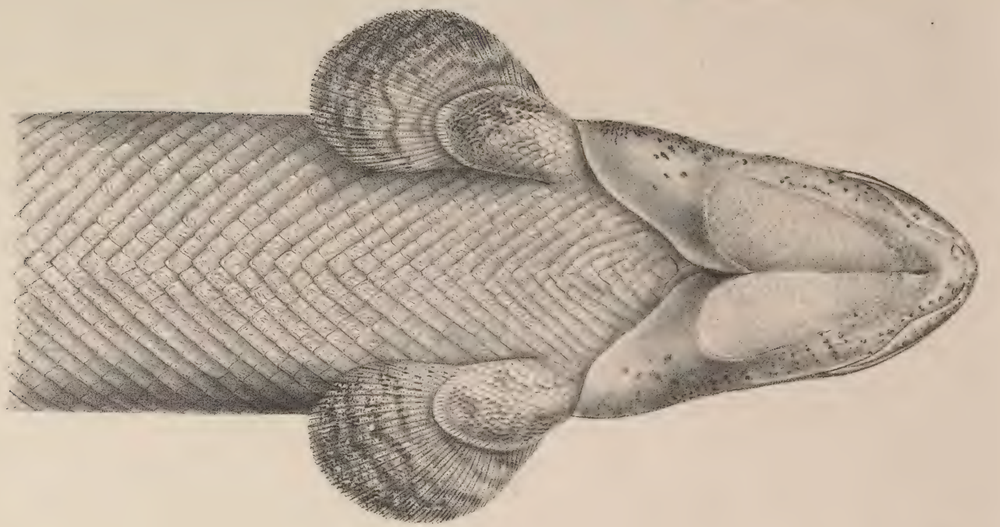


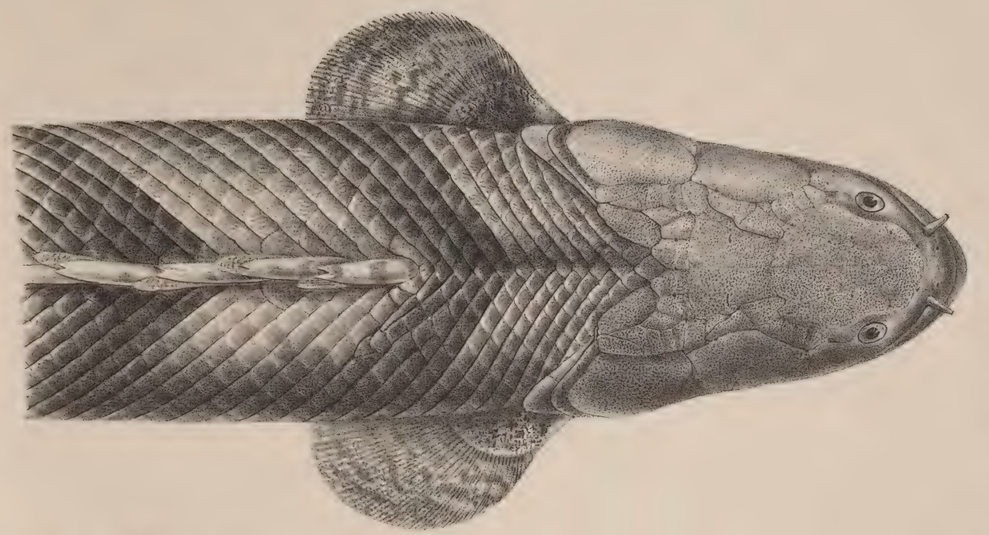
J. Green del. et lith.

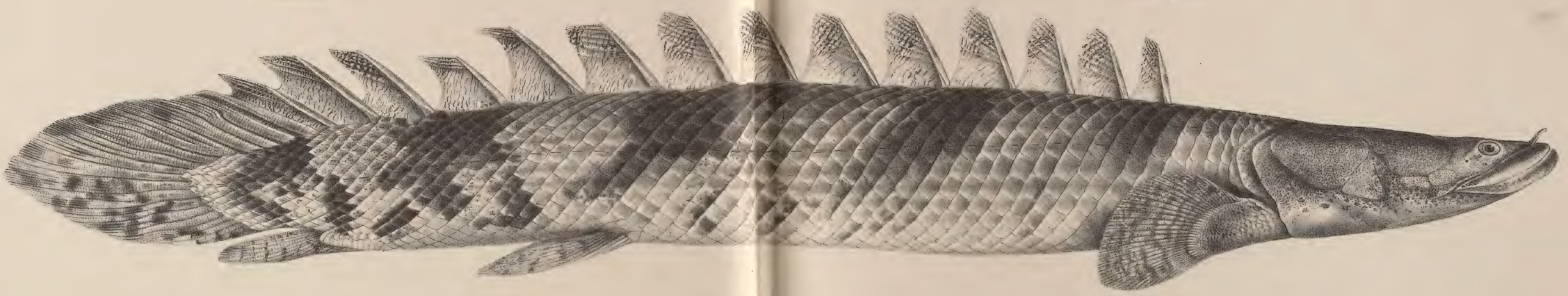
POLYPTERUS BICHIR.

J. Green, imp.









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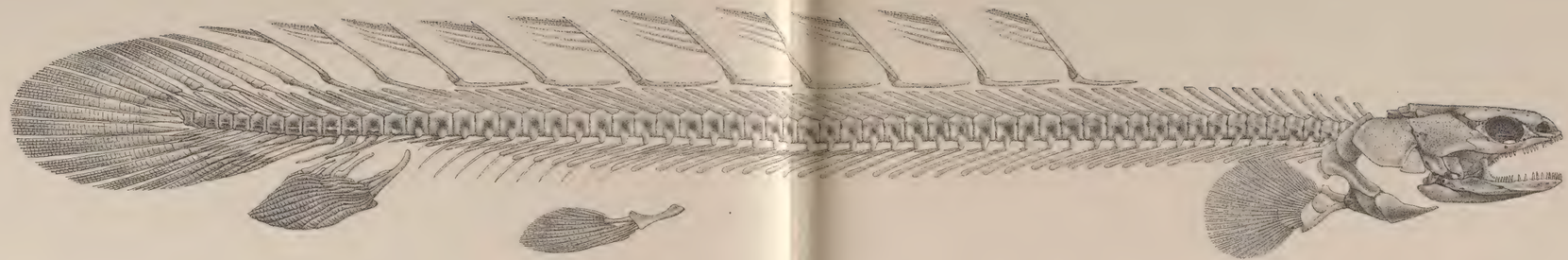

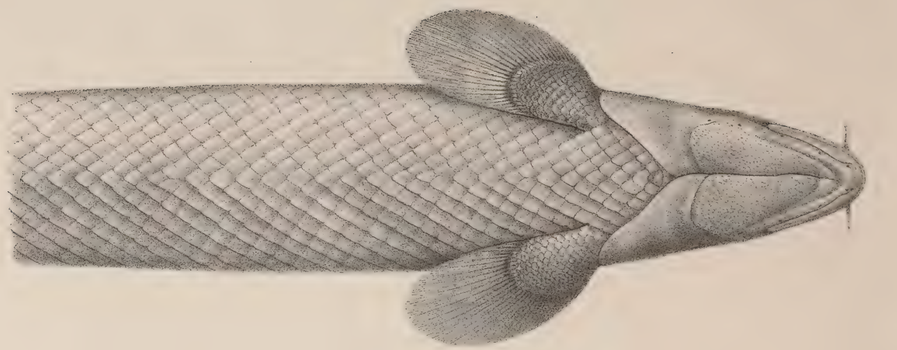

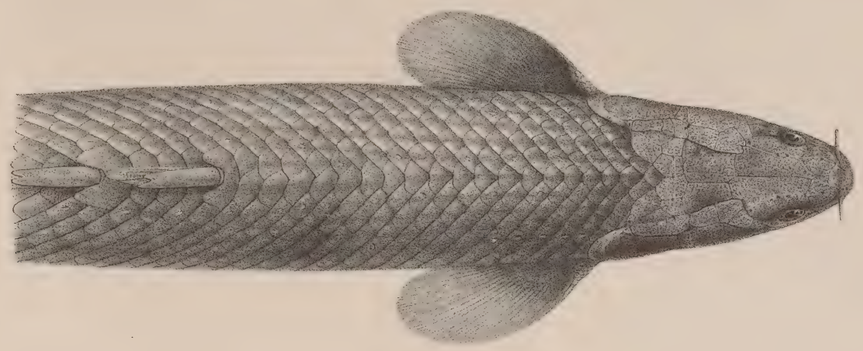

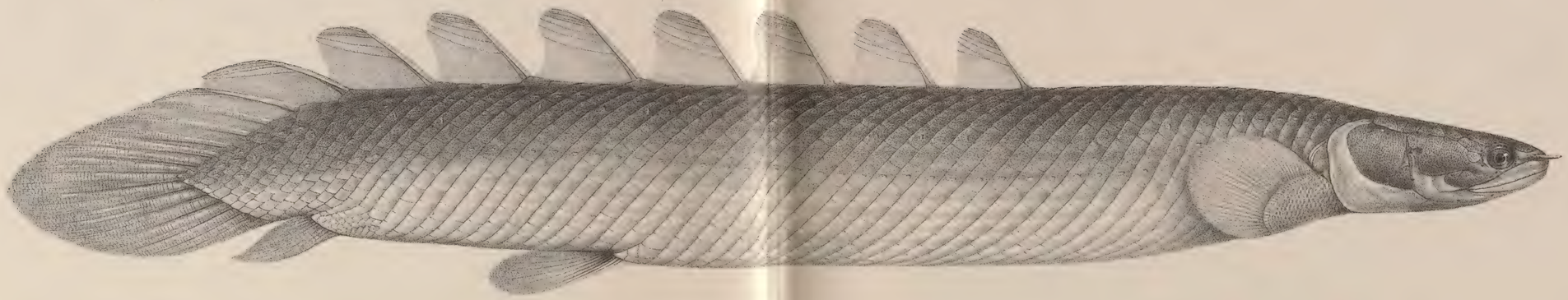

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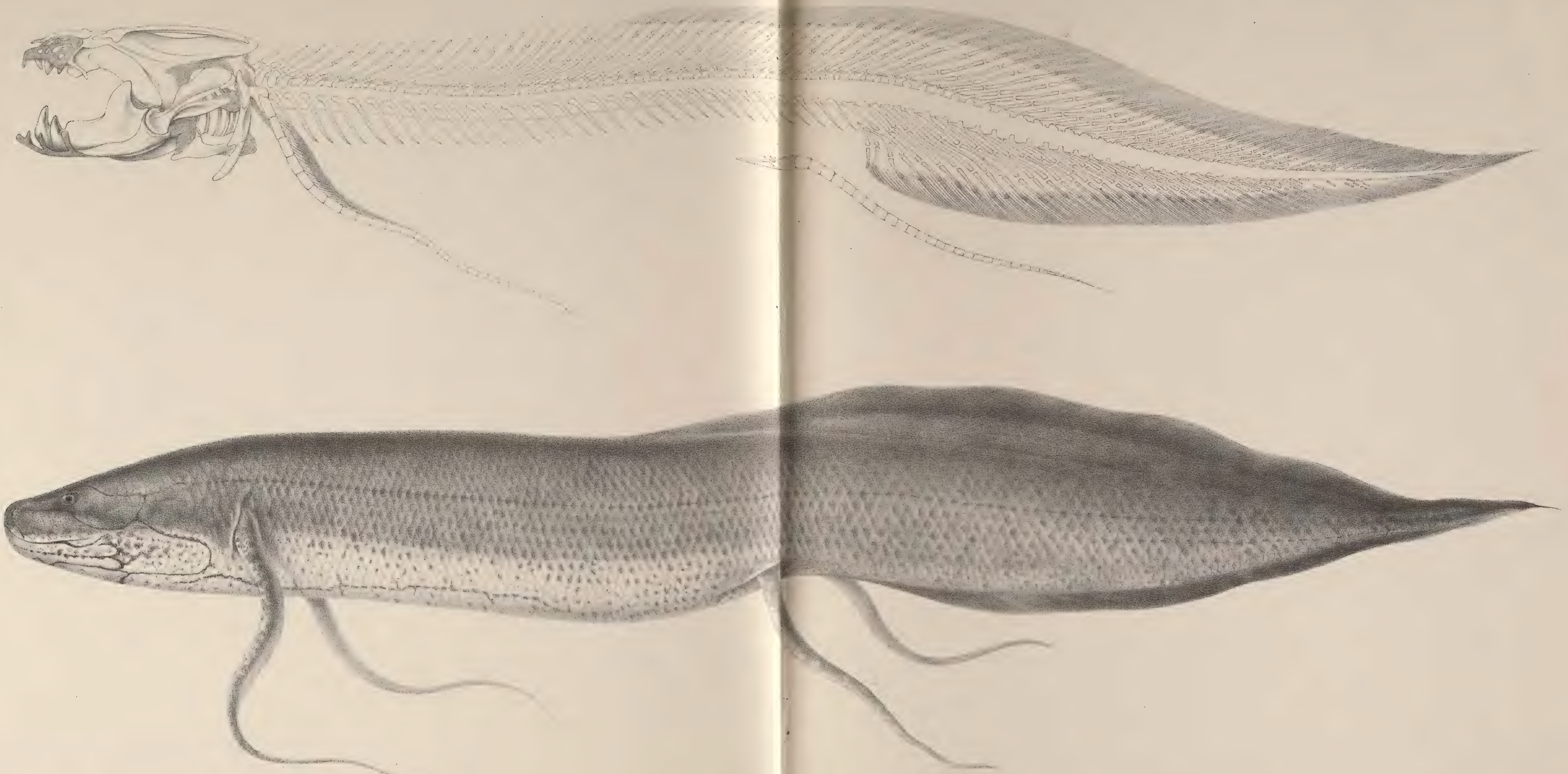

J. Green del. et lith.

PROTOPTERUS ÆTHIOPICUS.

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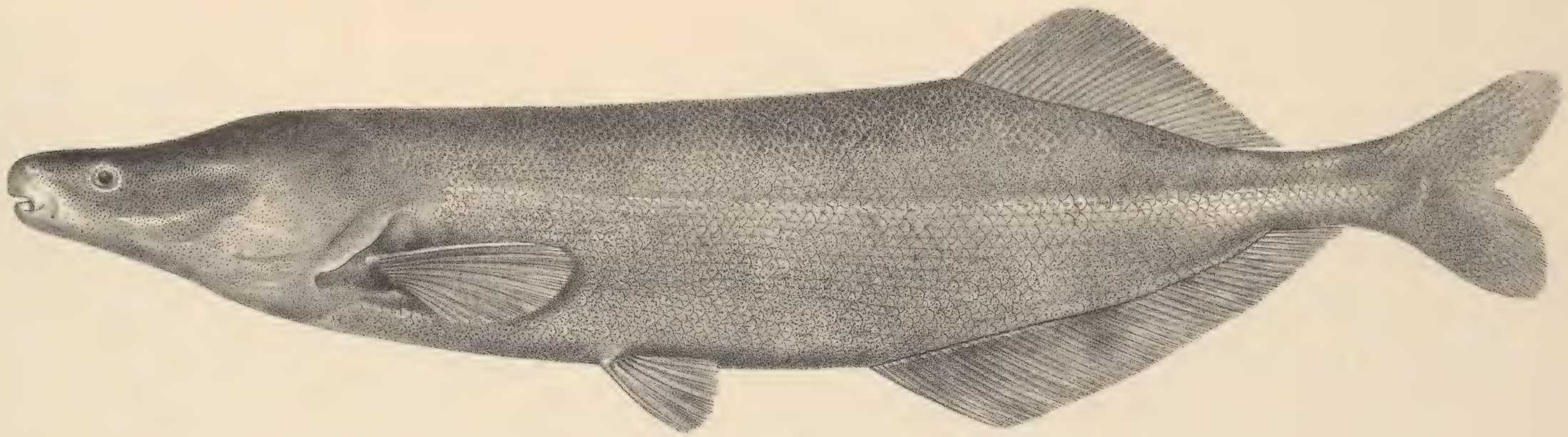

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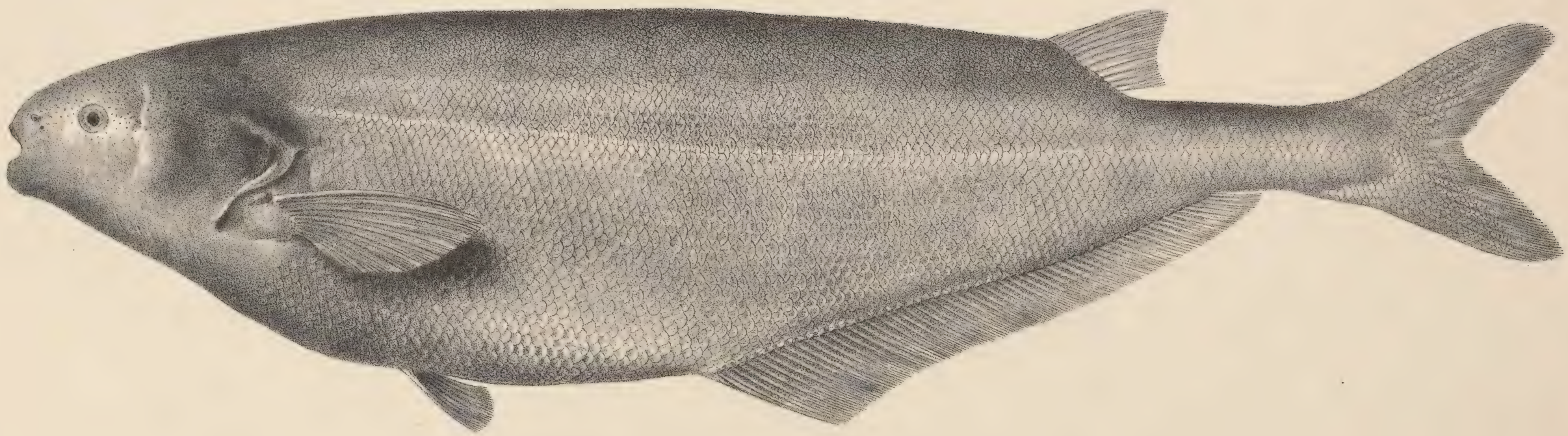

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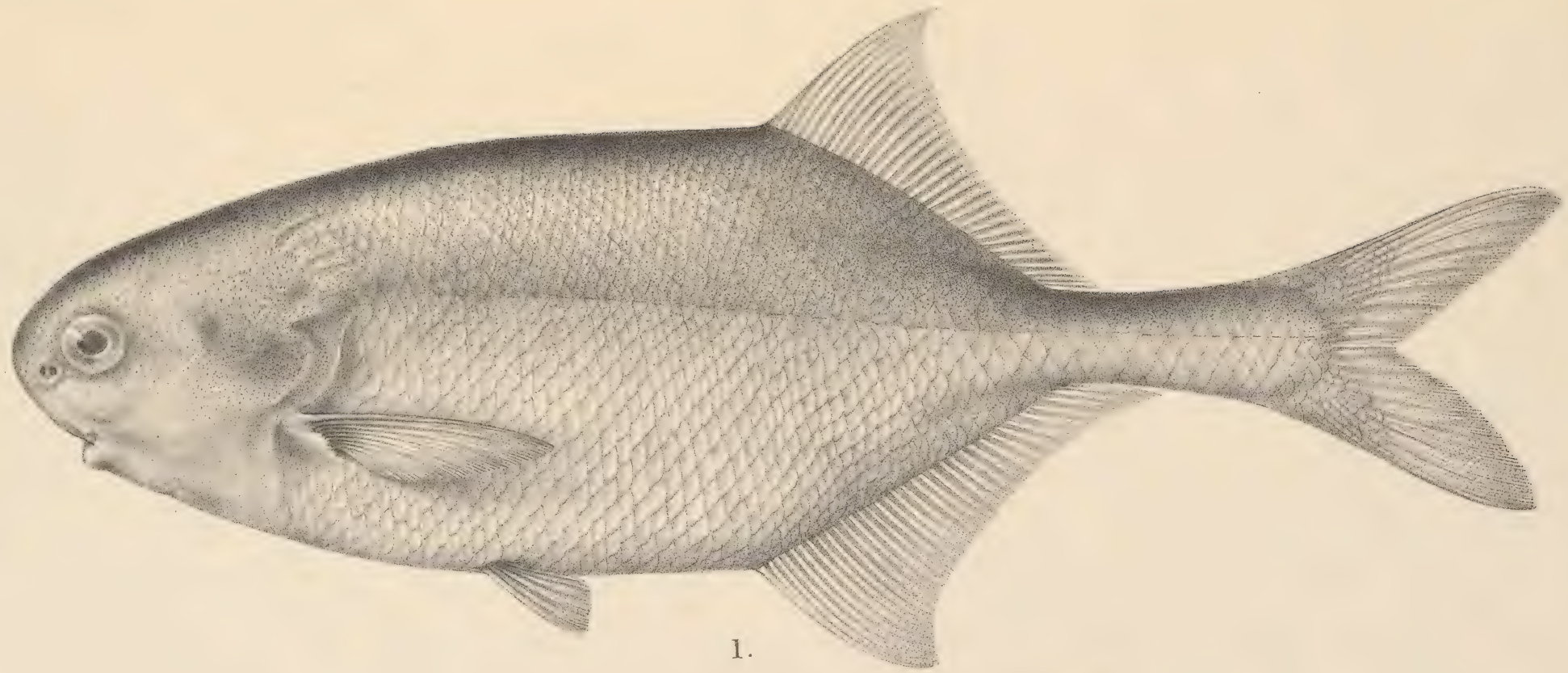

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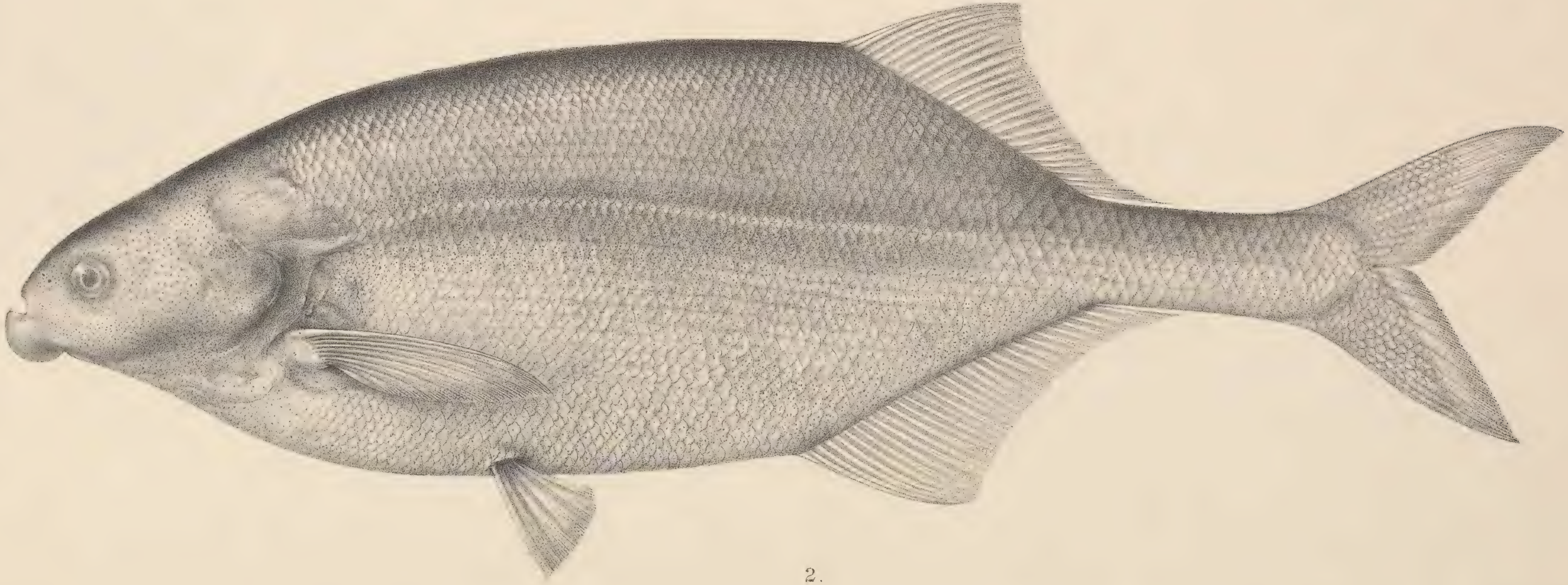

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J. Green del. et lith.

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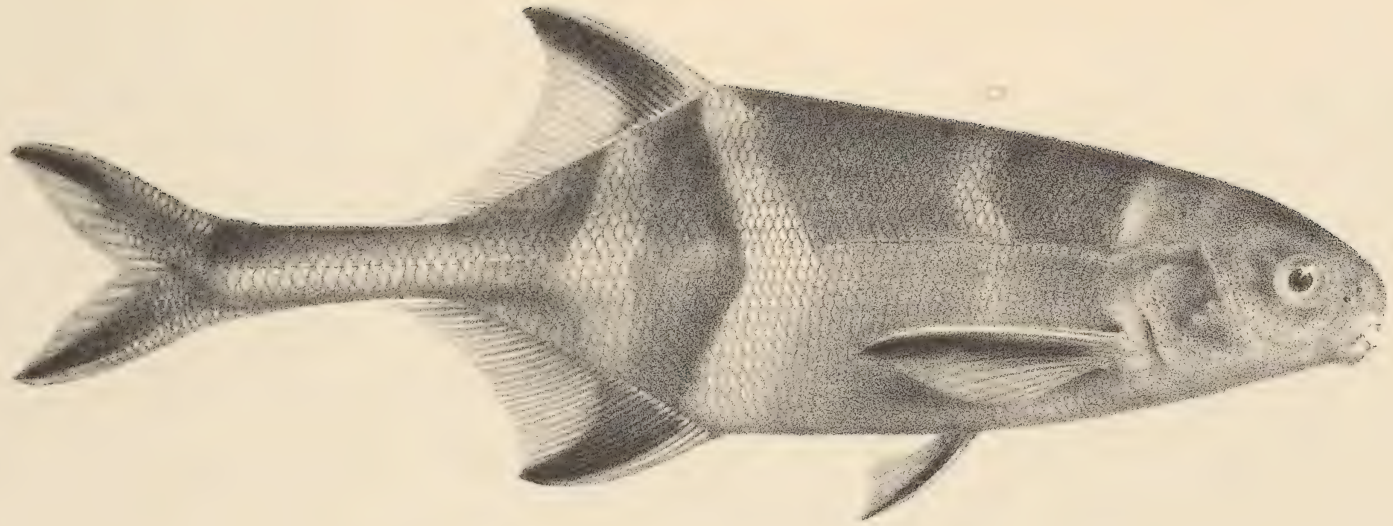

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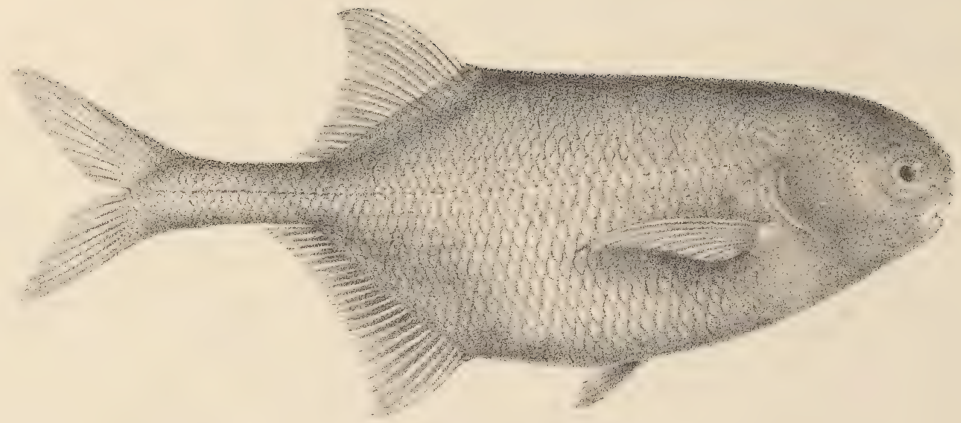

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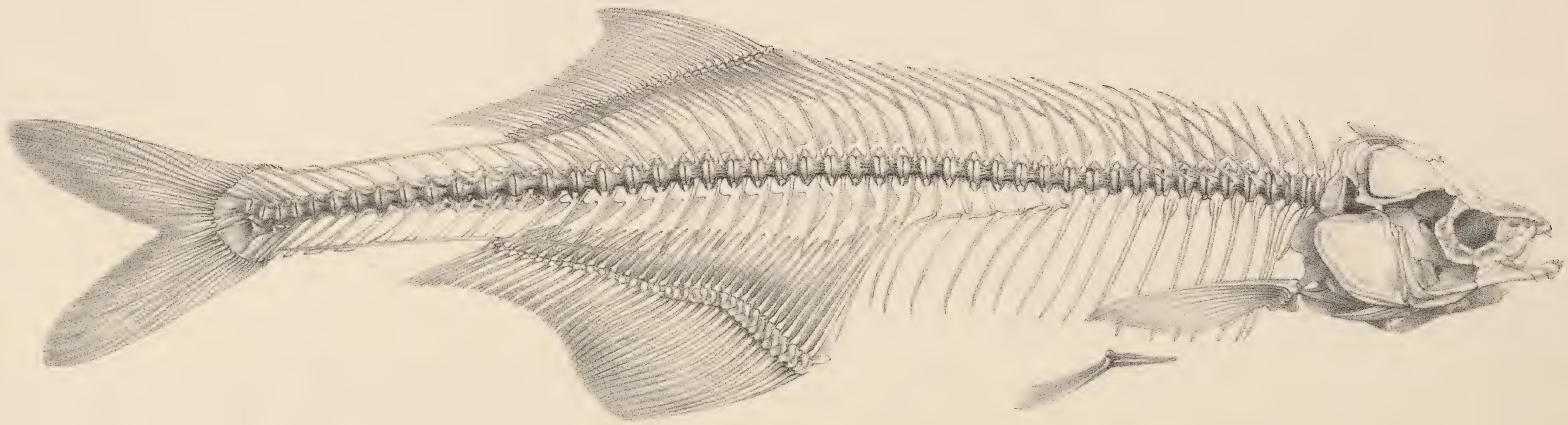

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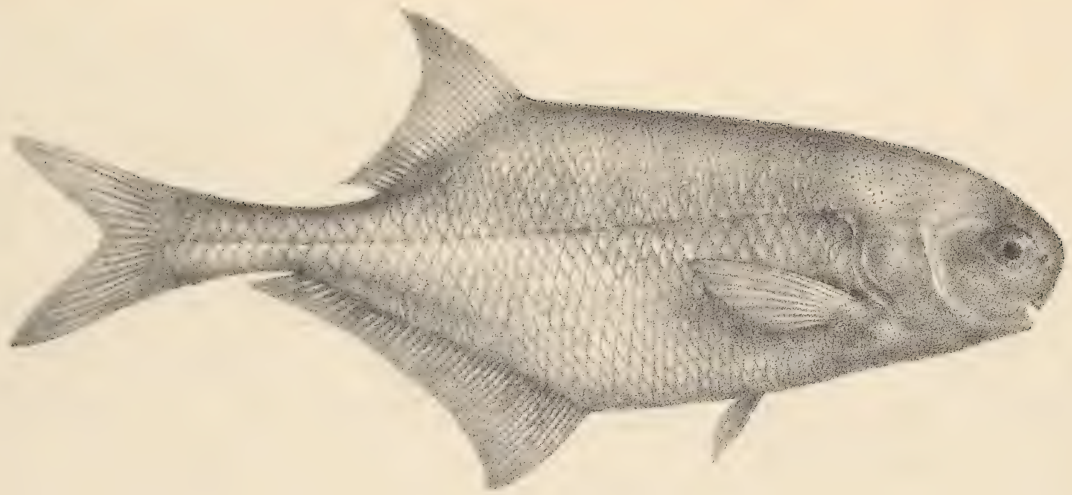

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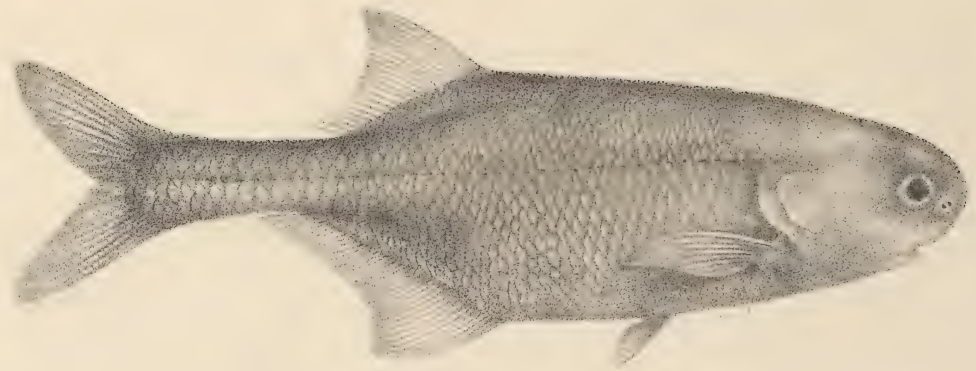

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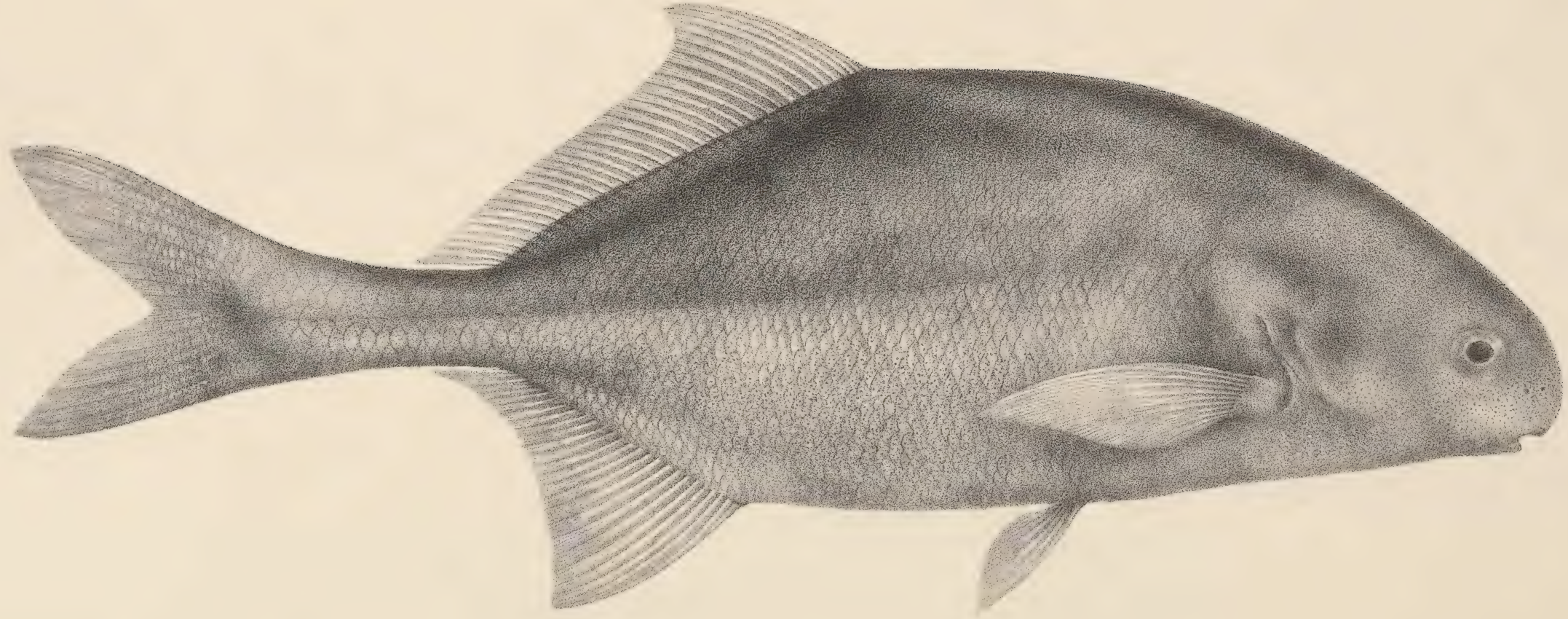

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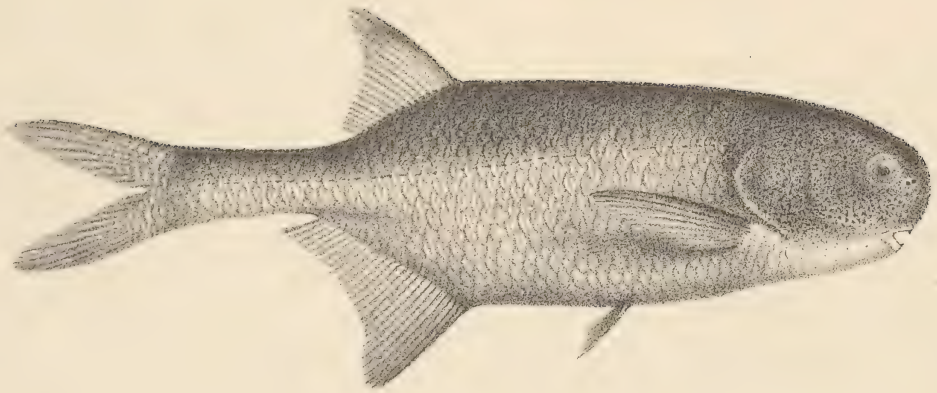

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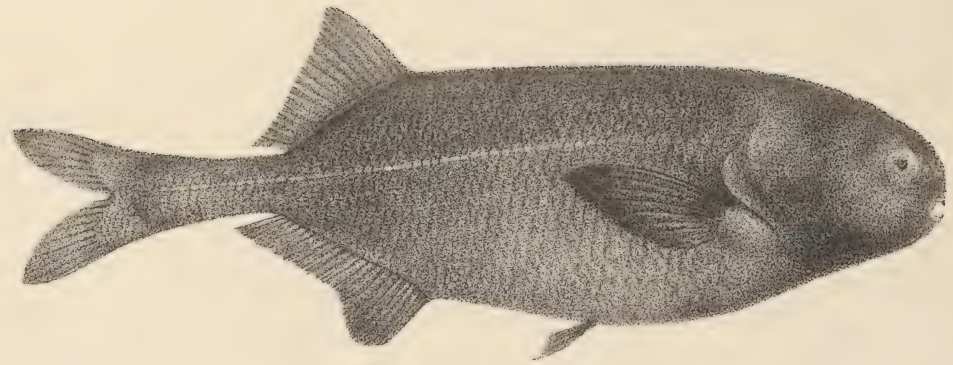

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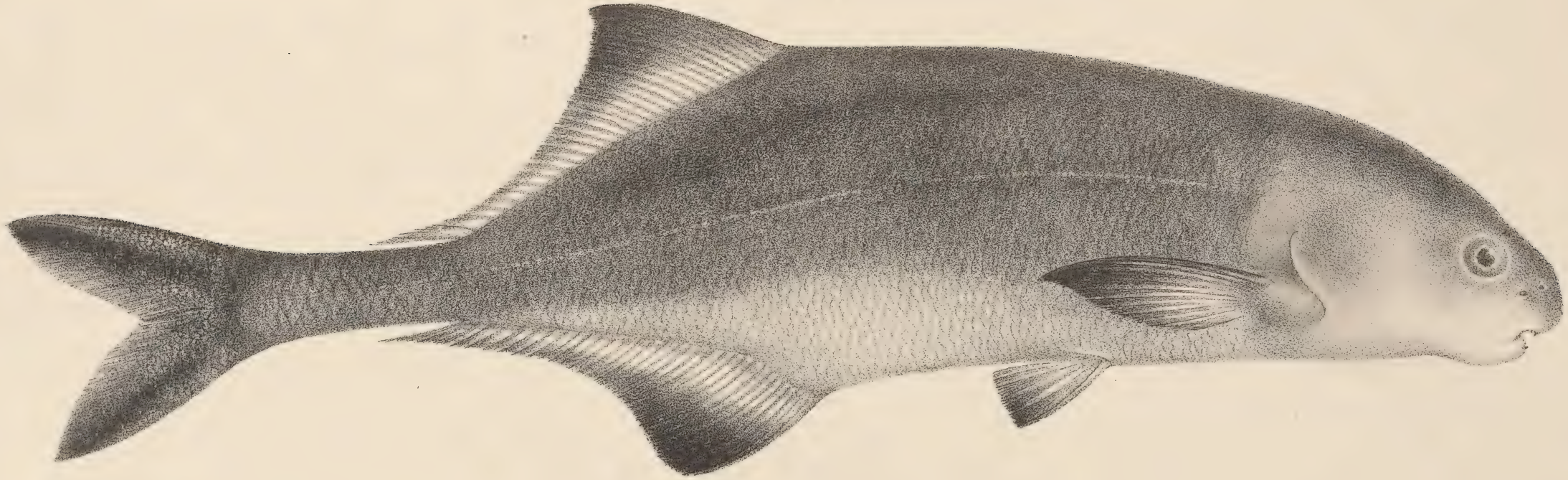

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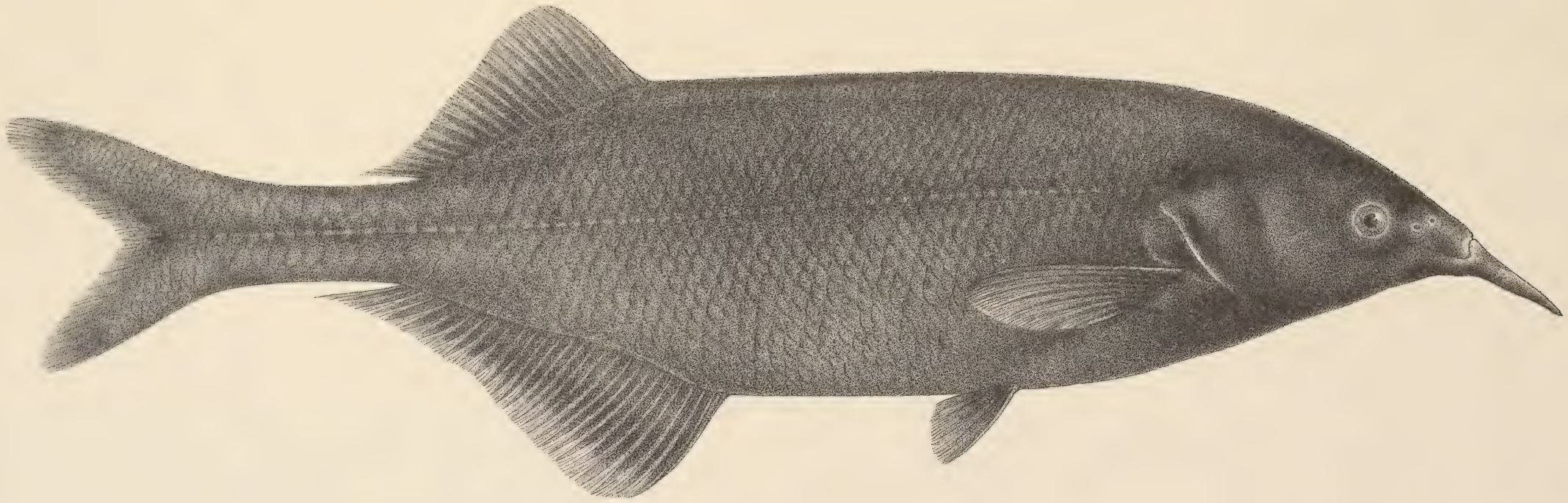

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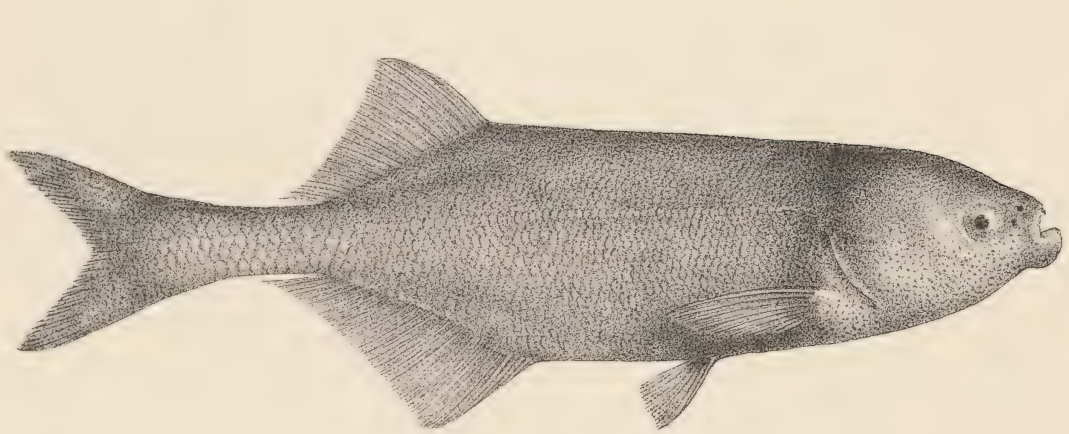

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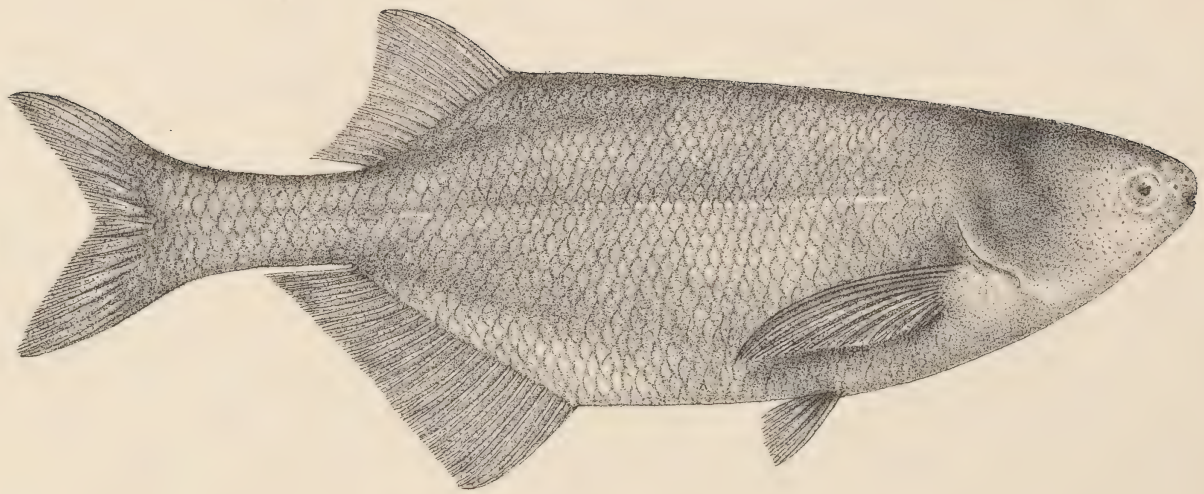

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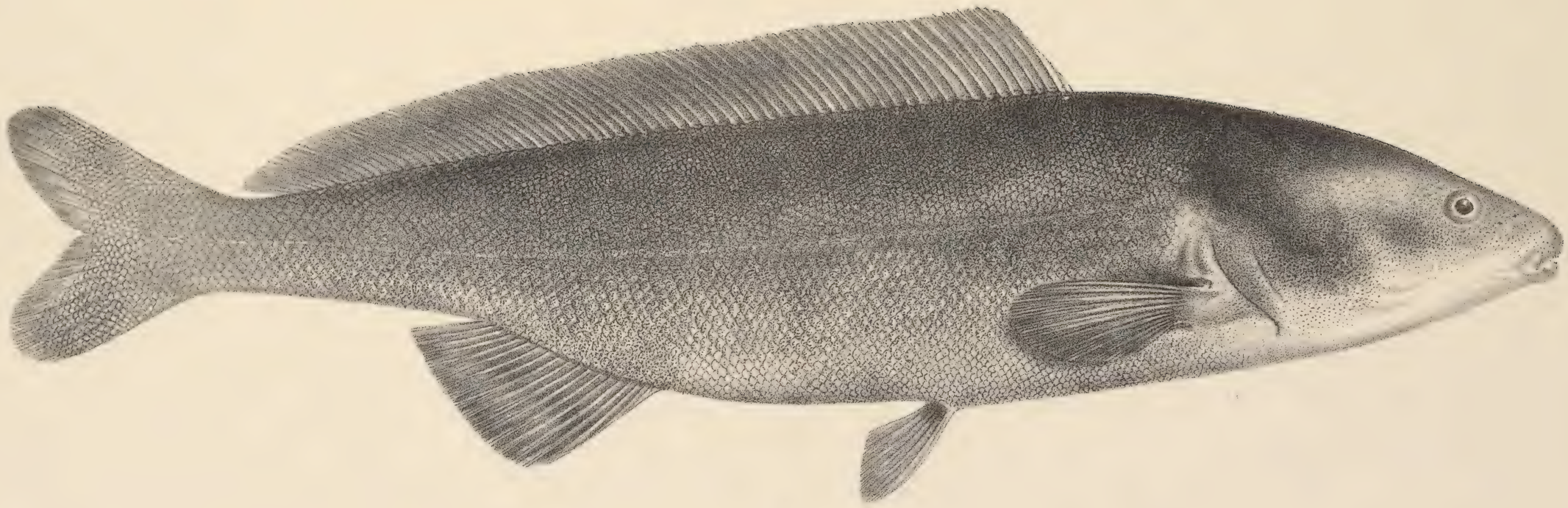

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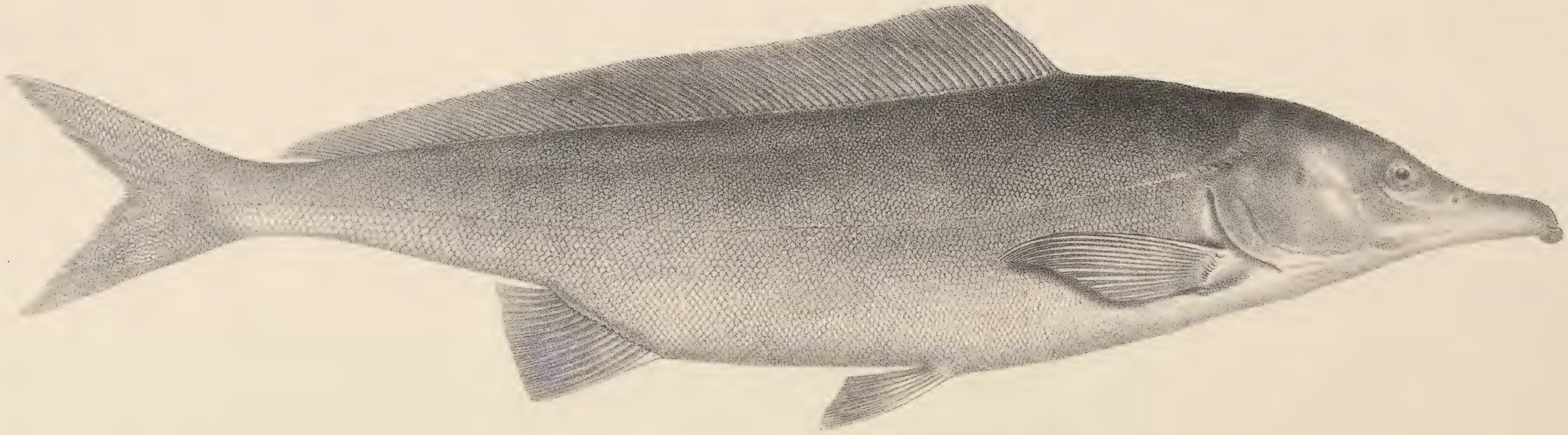

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P. Smit del. et lith.

J. Green imp.

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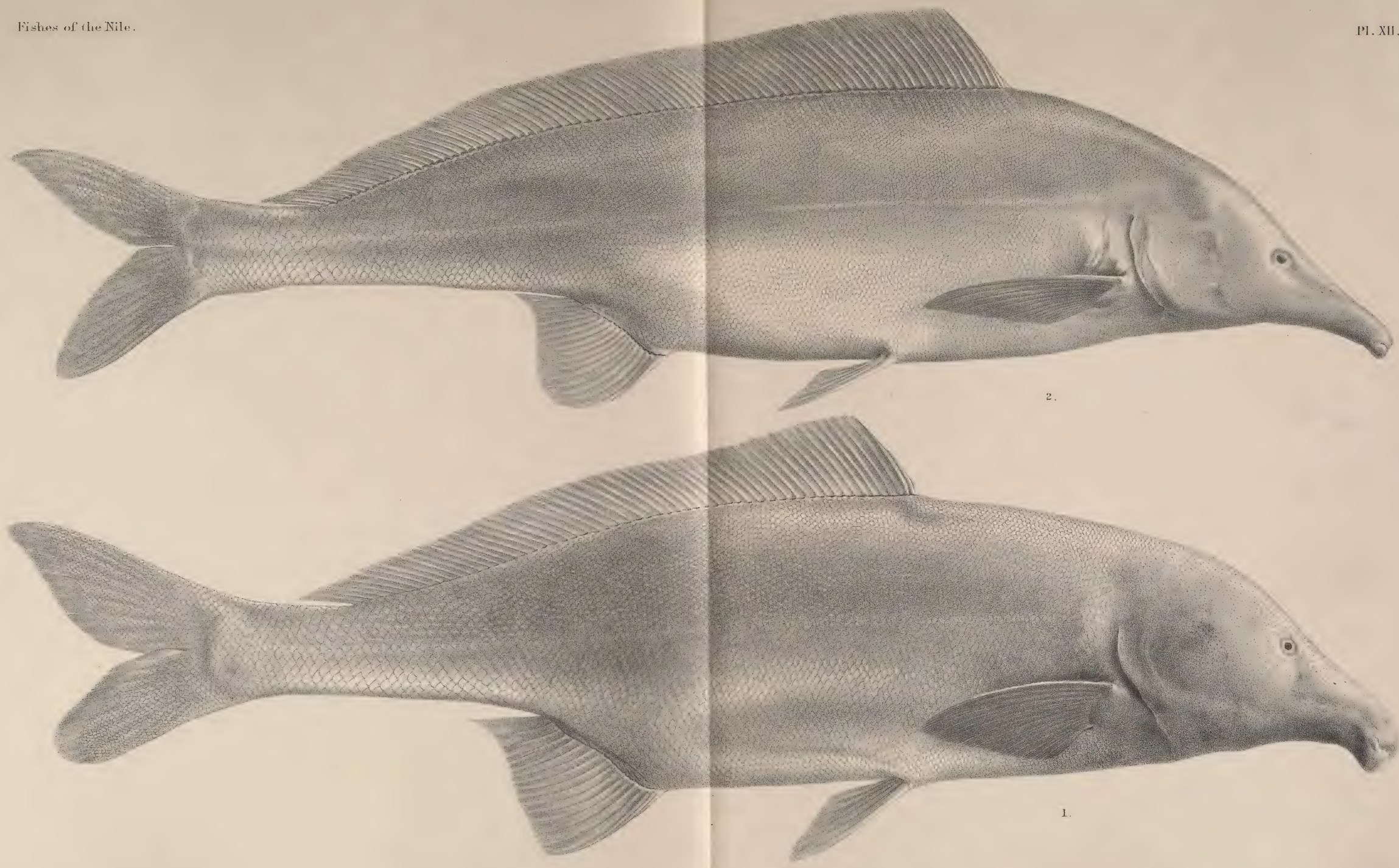

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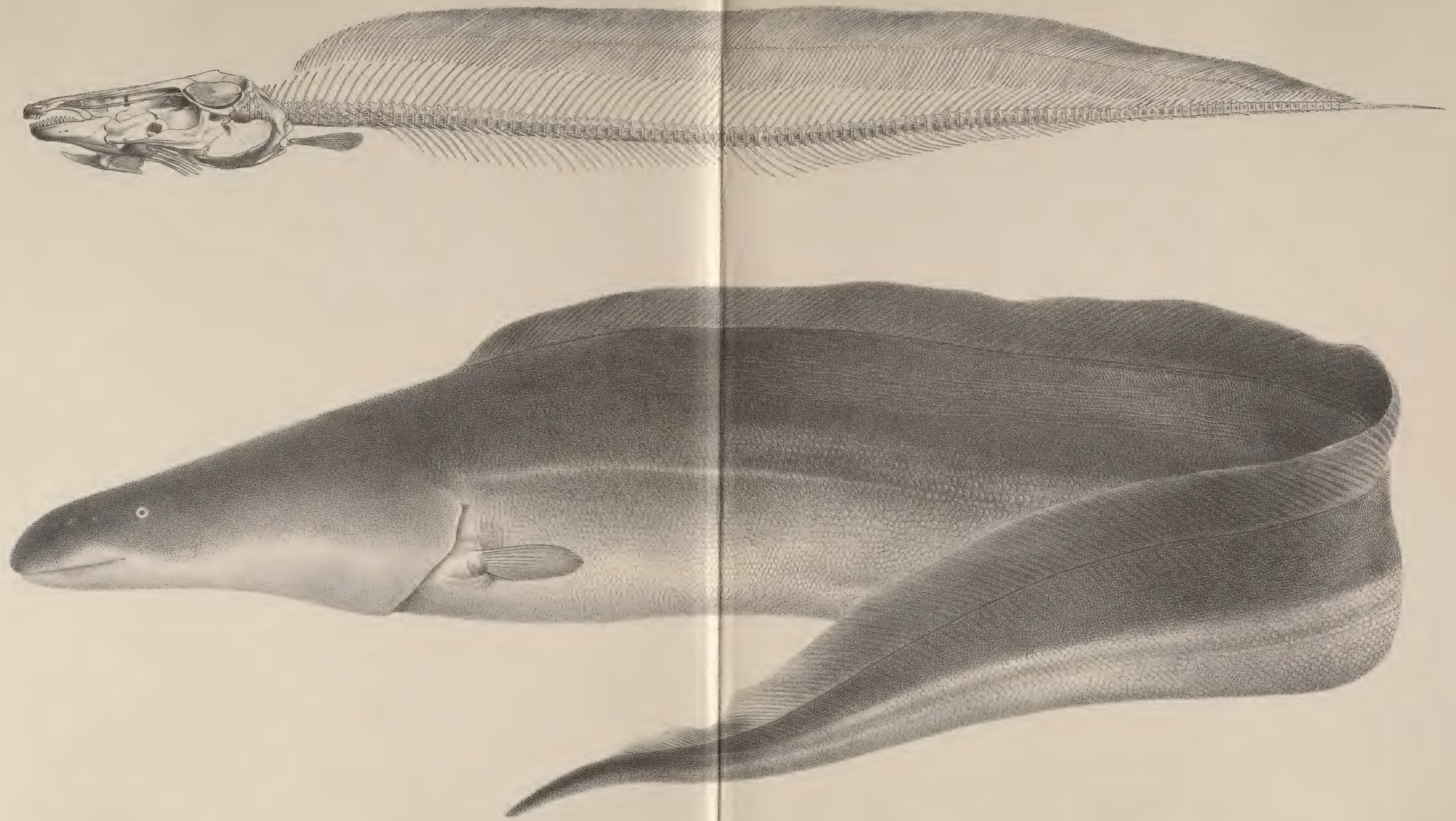

P Smit del. et lith.

GYMNARCHUS NILOTICUS.

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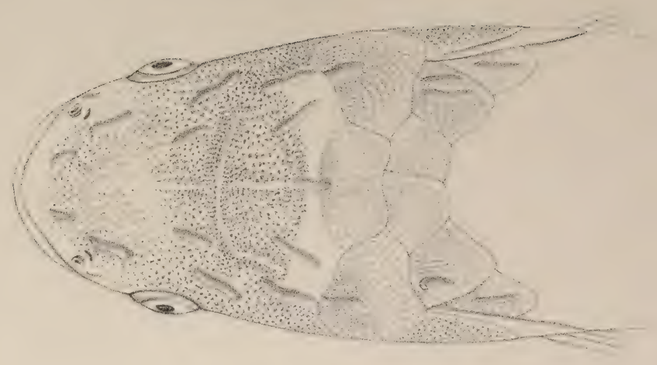

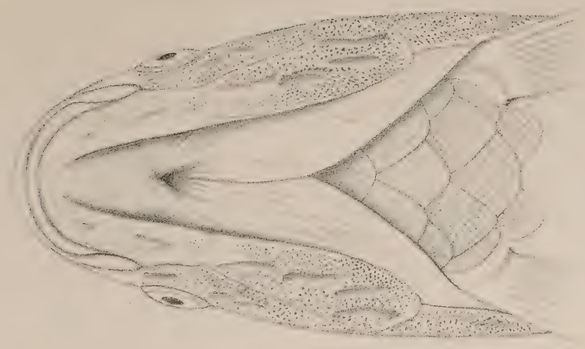

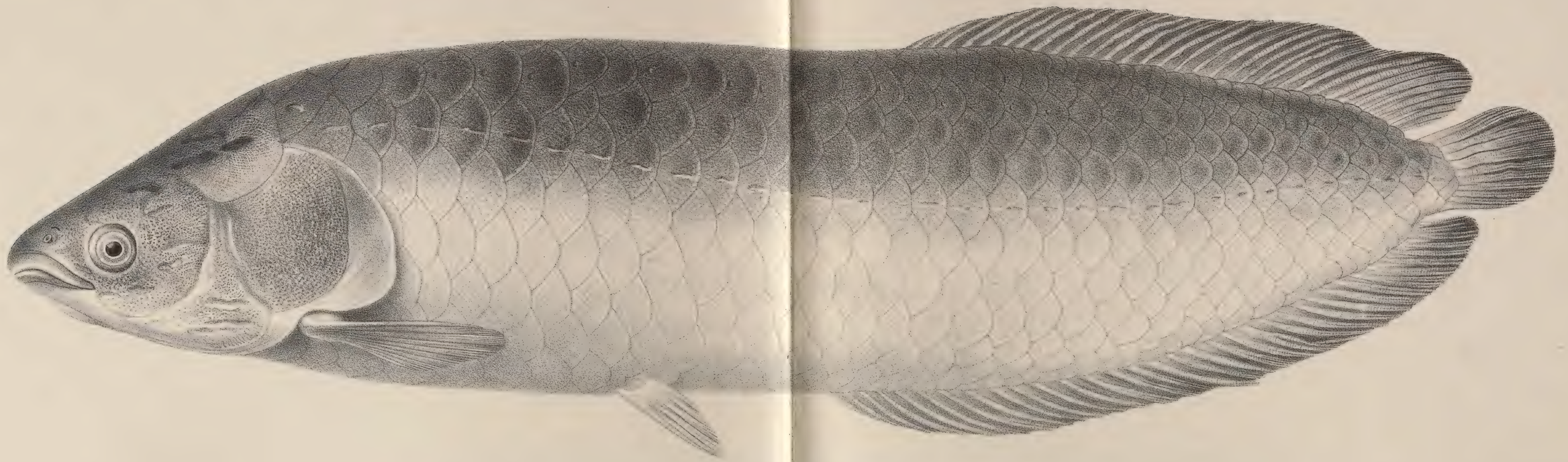

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HETEROTIS NILOTICUS.

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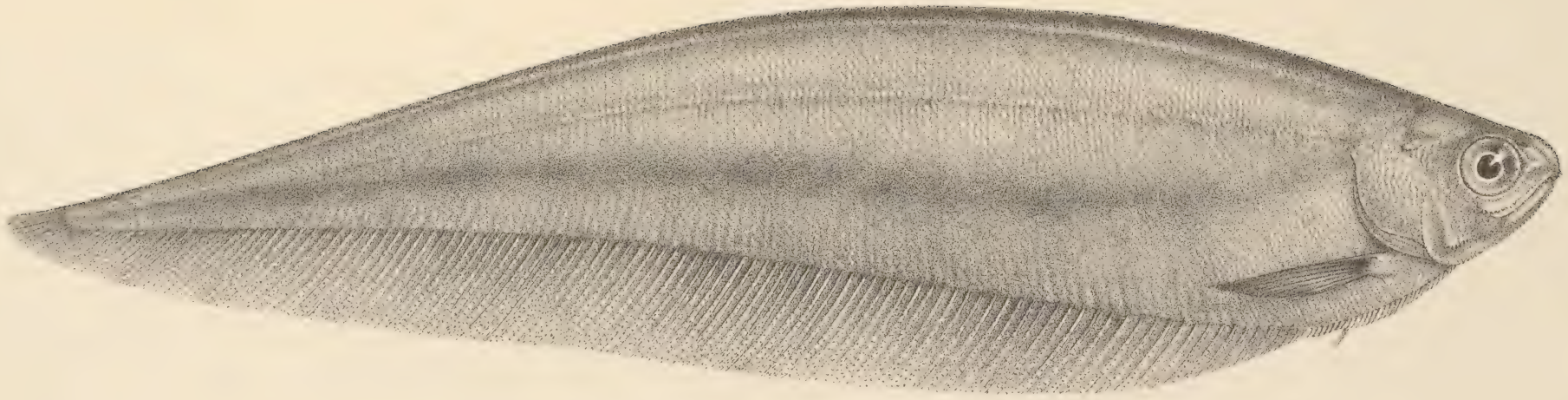

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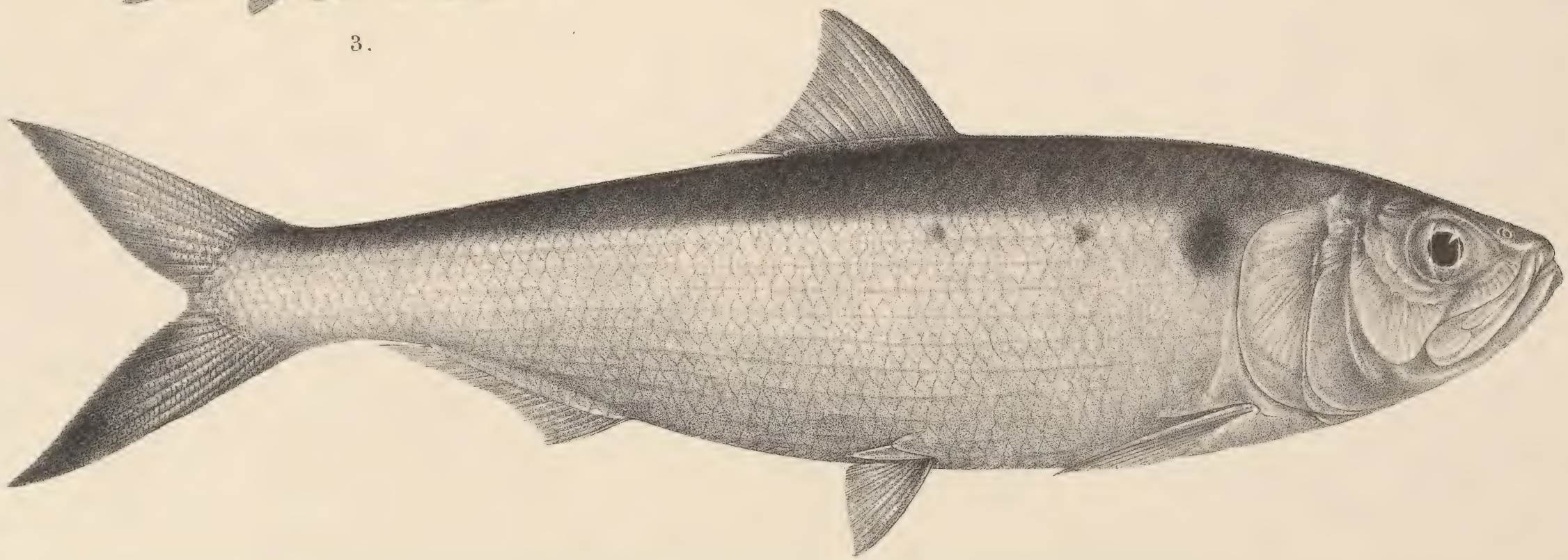

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J. Green del. et lith.

J. Green imp.

1. XENOMYSTUS NIGRI. 2. CLUPEA FINTA. 3. CROMERIA NILOTICA.

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J. Green del. et lith.

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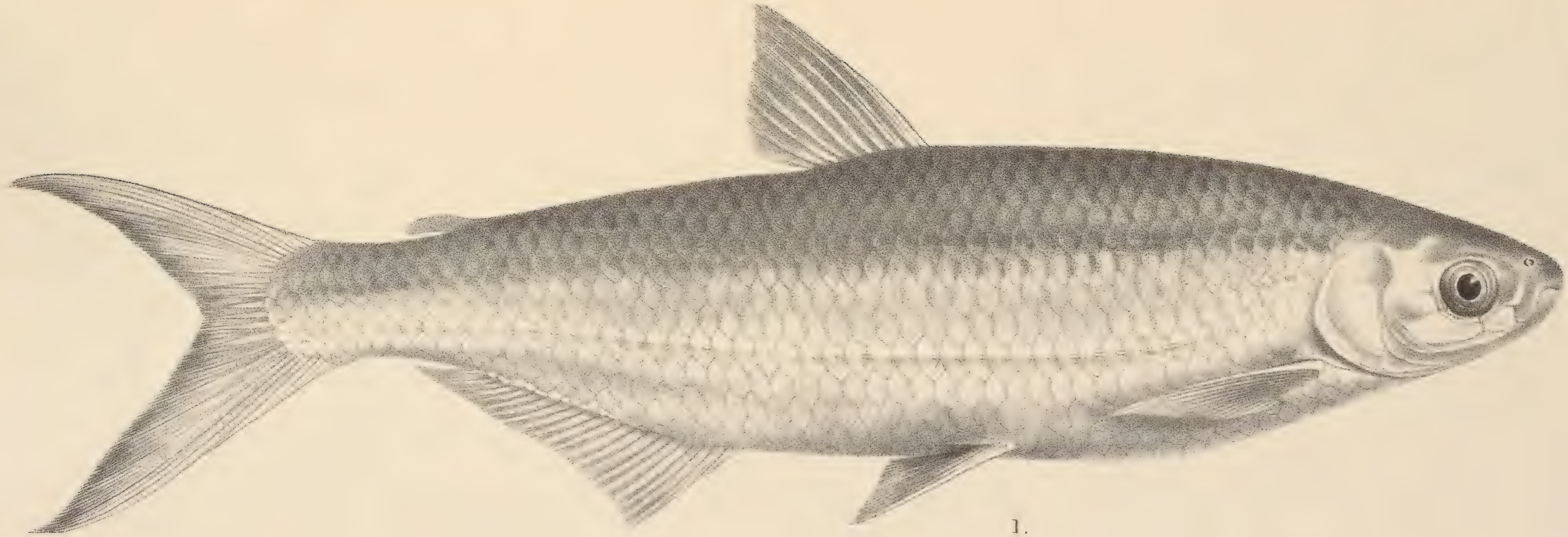
J. Green imp.



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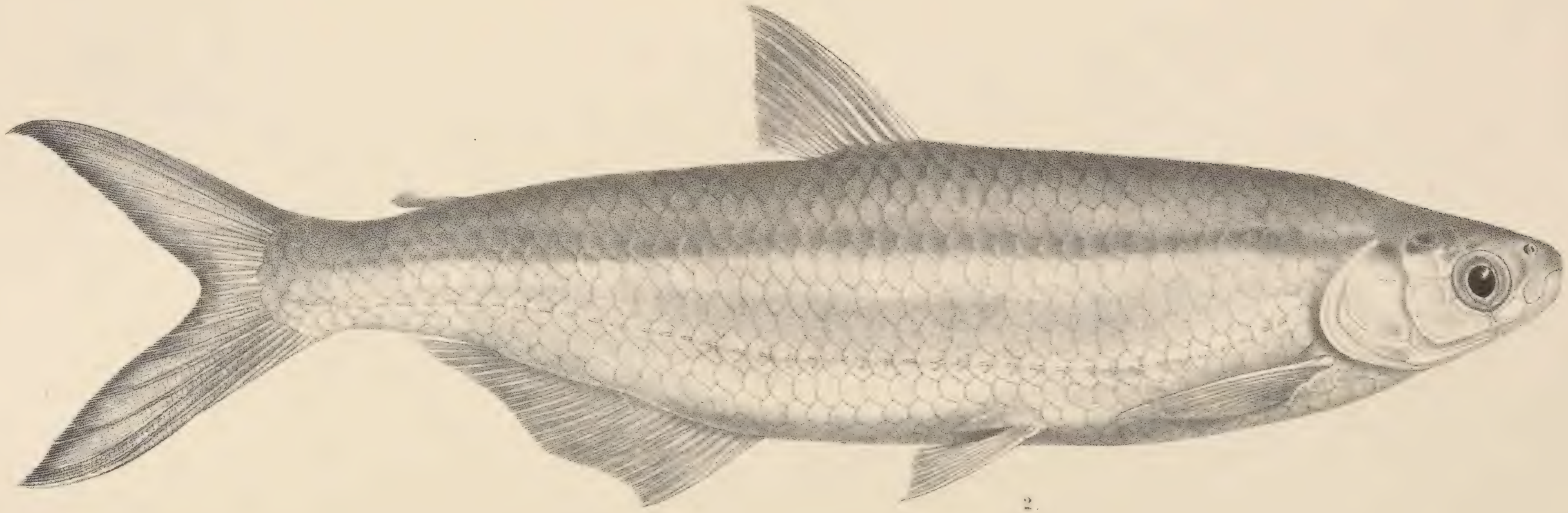

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J. Green imp.

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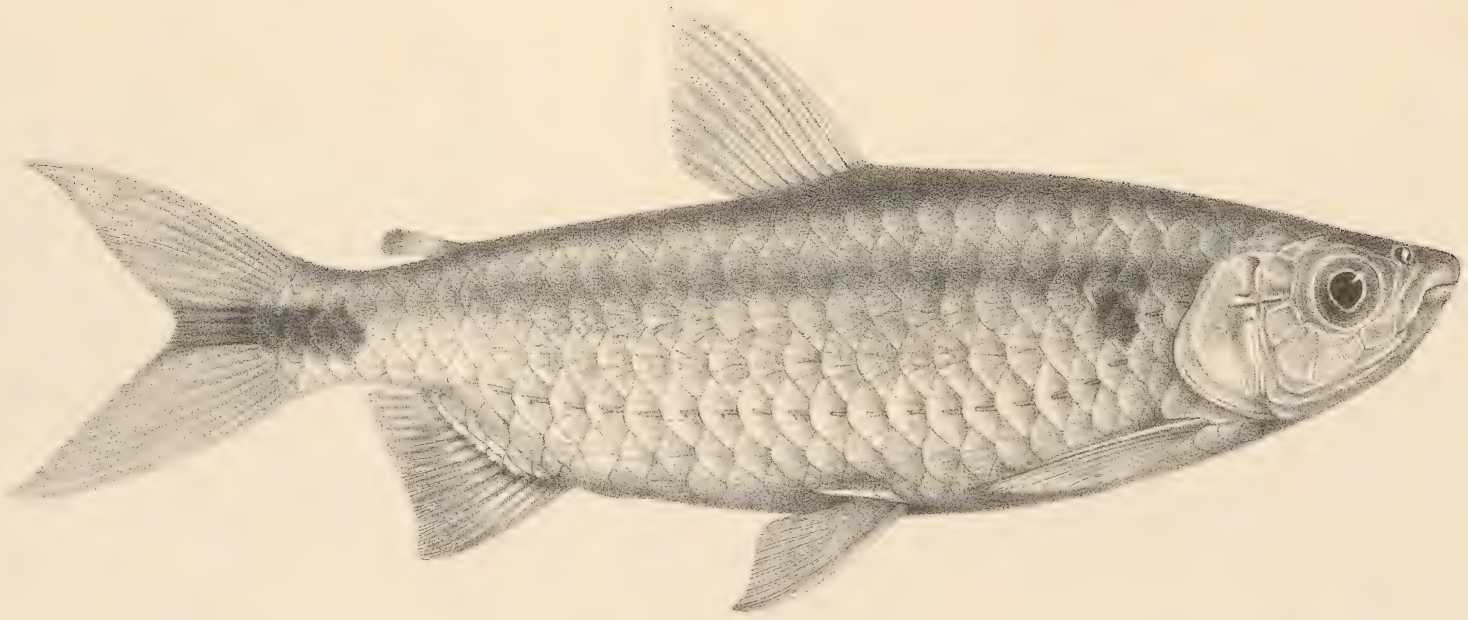

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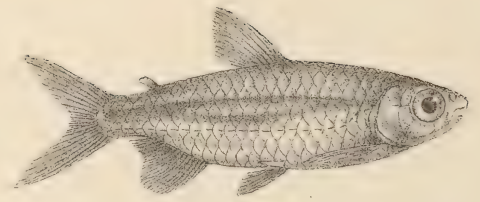

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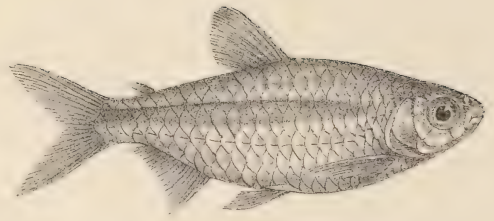

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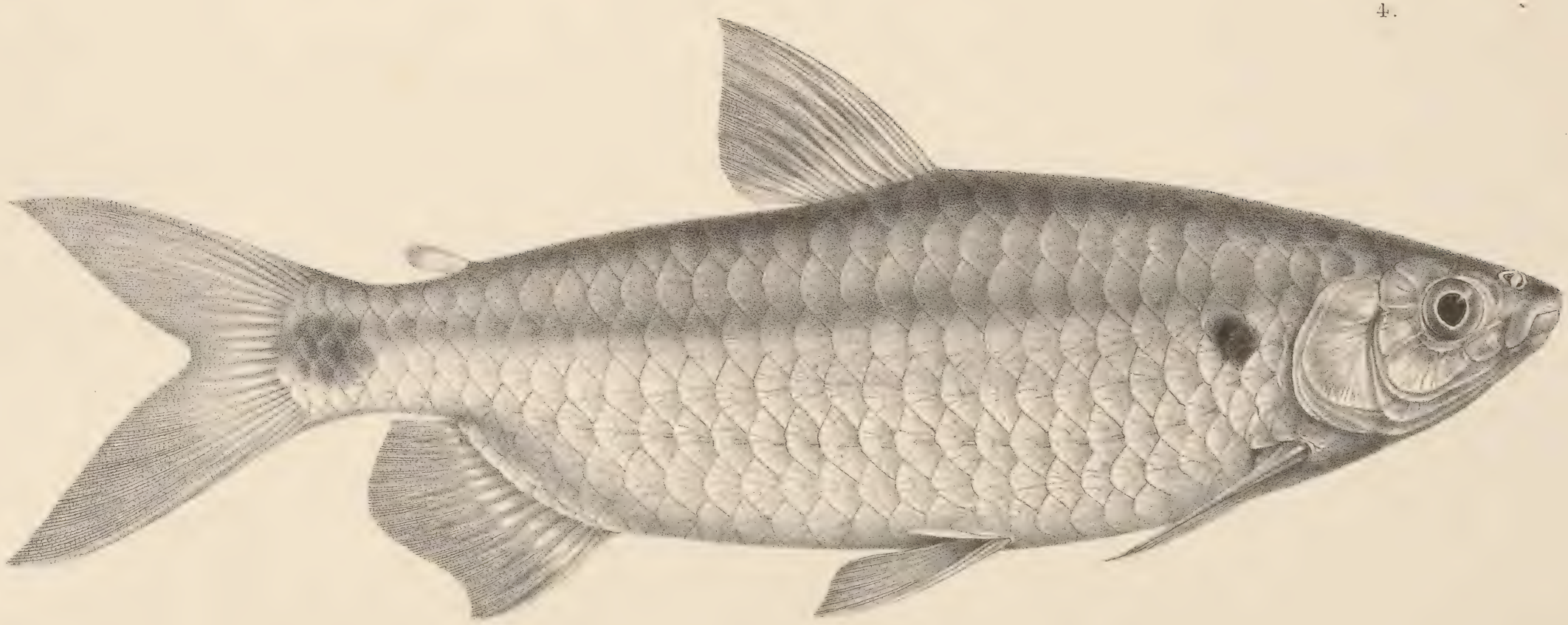

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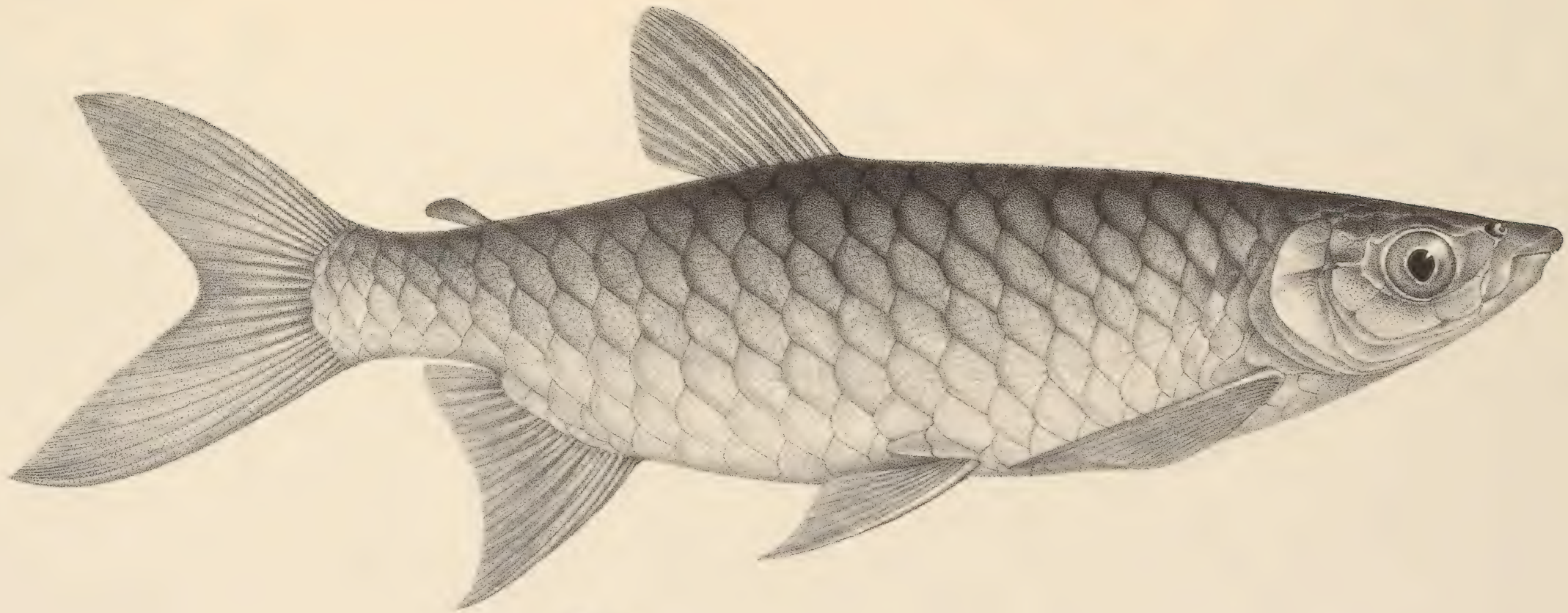
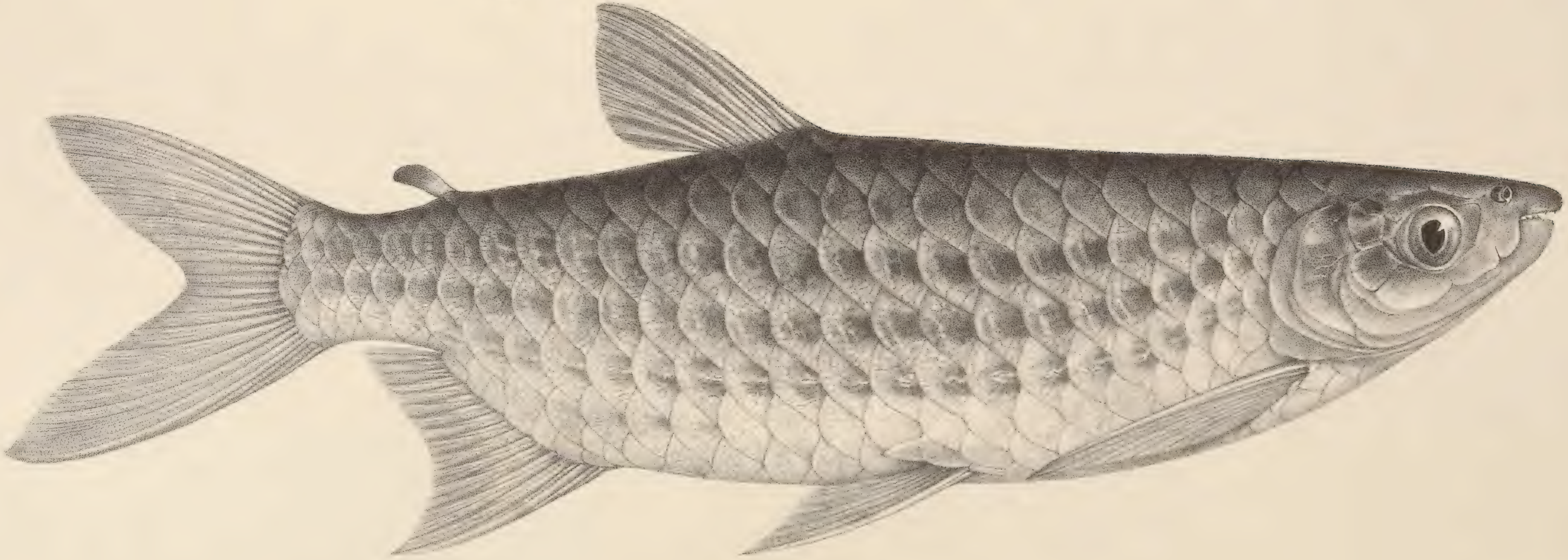
J. Green del. et lith.

J. Green imp.

1, 2. ALESTES NURSE. 3, 4. MICRALESTES ACUTIDENS.

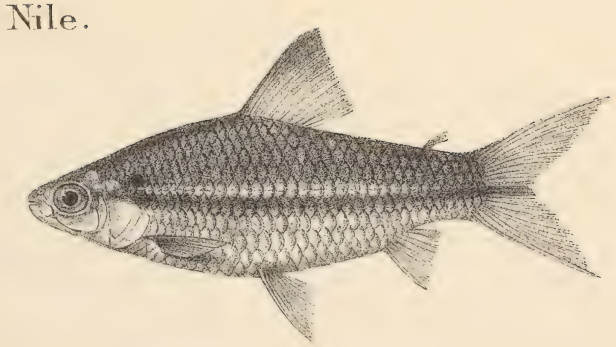




J. Green del. et lith.

ALESTES MACROLEPIDOTUS.

J. Green imp.



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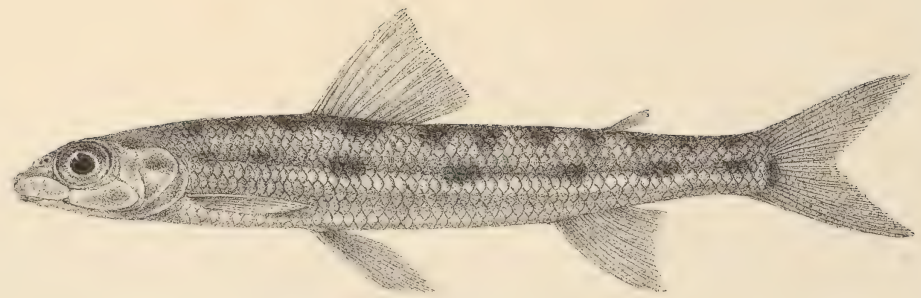

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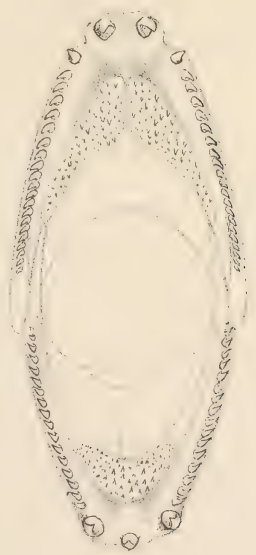

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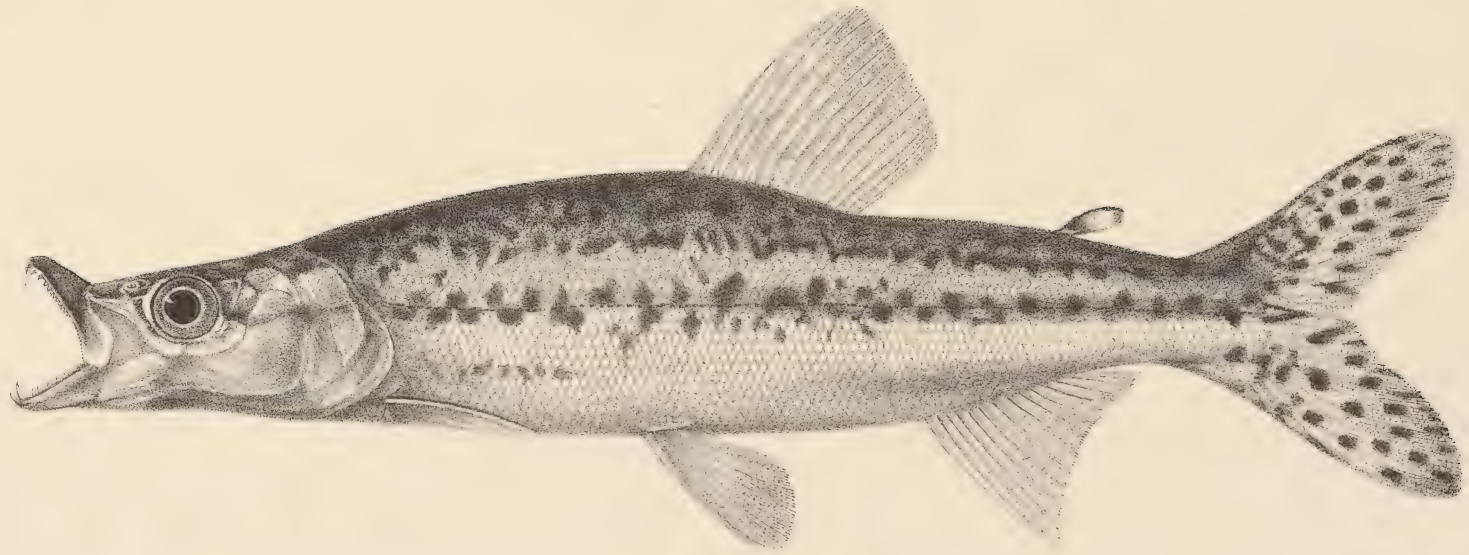

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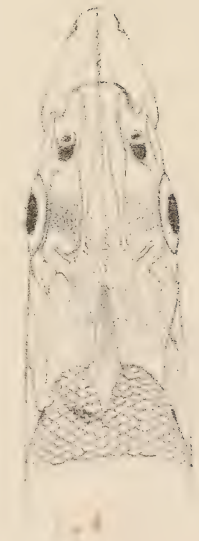

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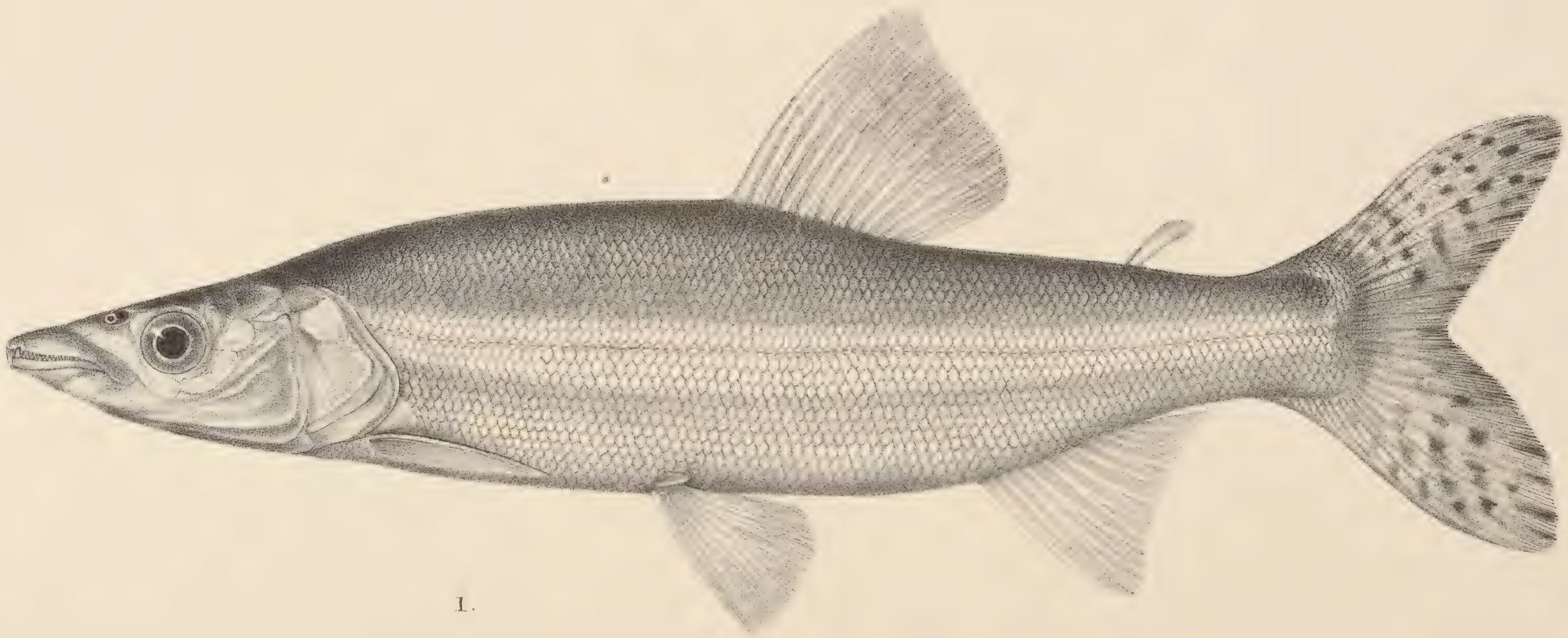
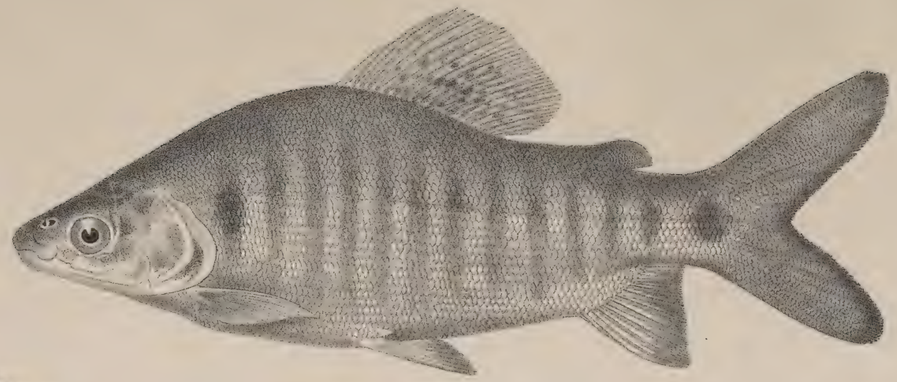


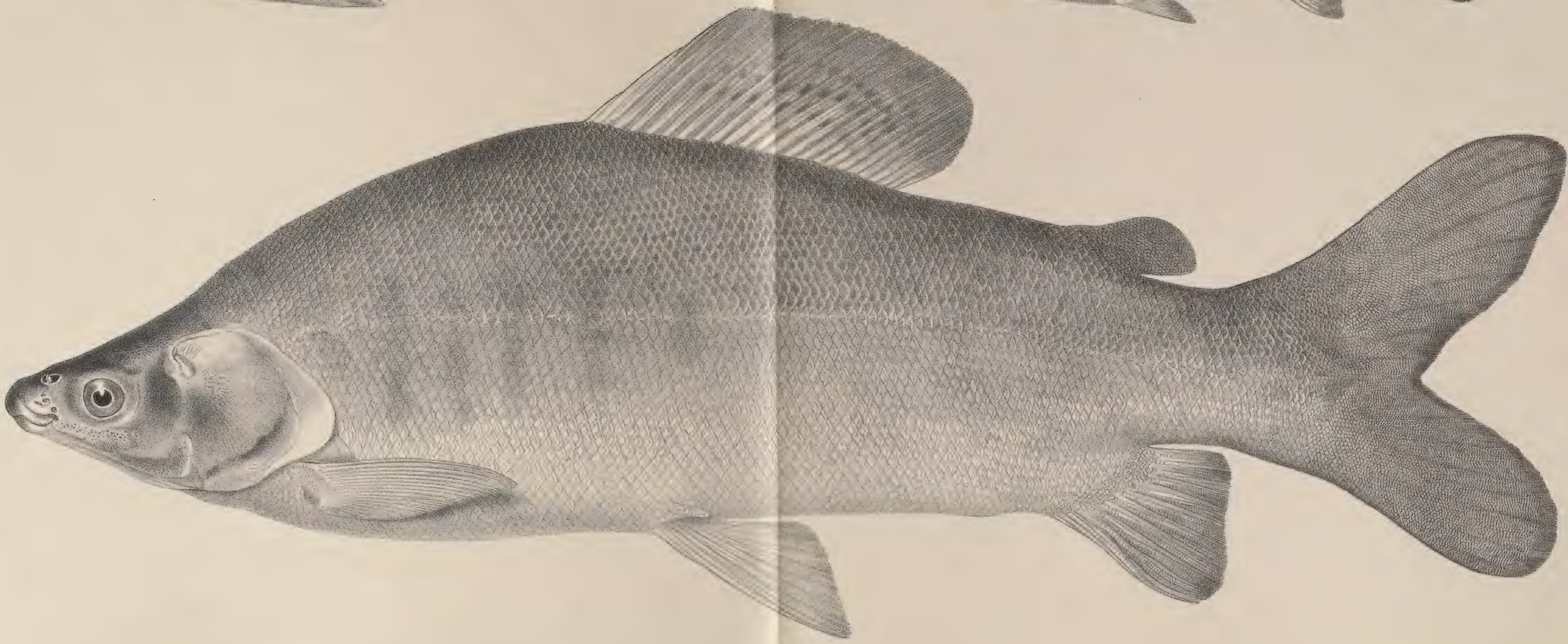
1.

J. Green del et lith.

1, 2. ICHTHYOBORUS BESSE. 3. NANNÆTHIOPS UNITÆNIATUS. 4. NANNOCHARAX NILOTICUS.

J. Green imp.

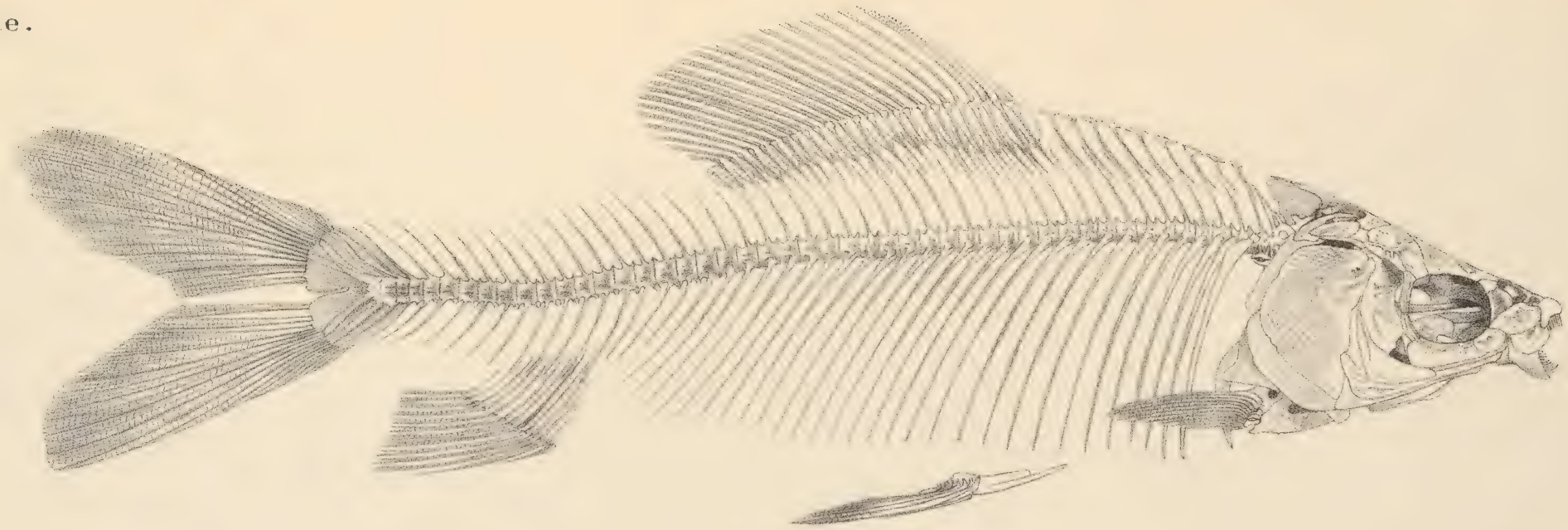




P. Smit del et lith.

DISTICHODUS NILOTICUS.

J. Green imp.



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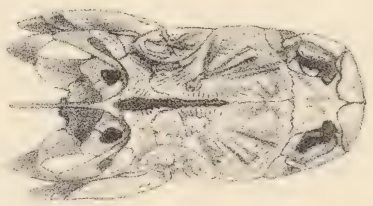

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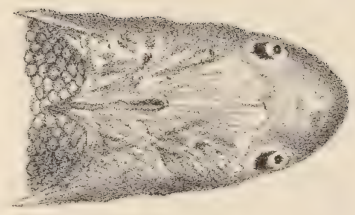

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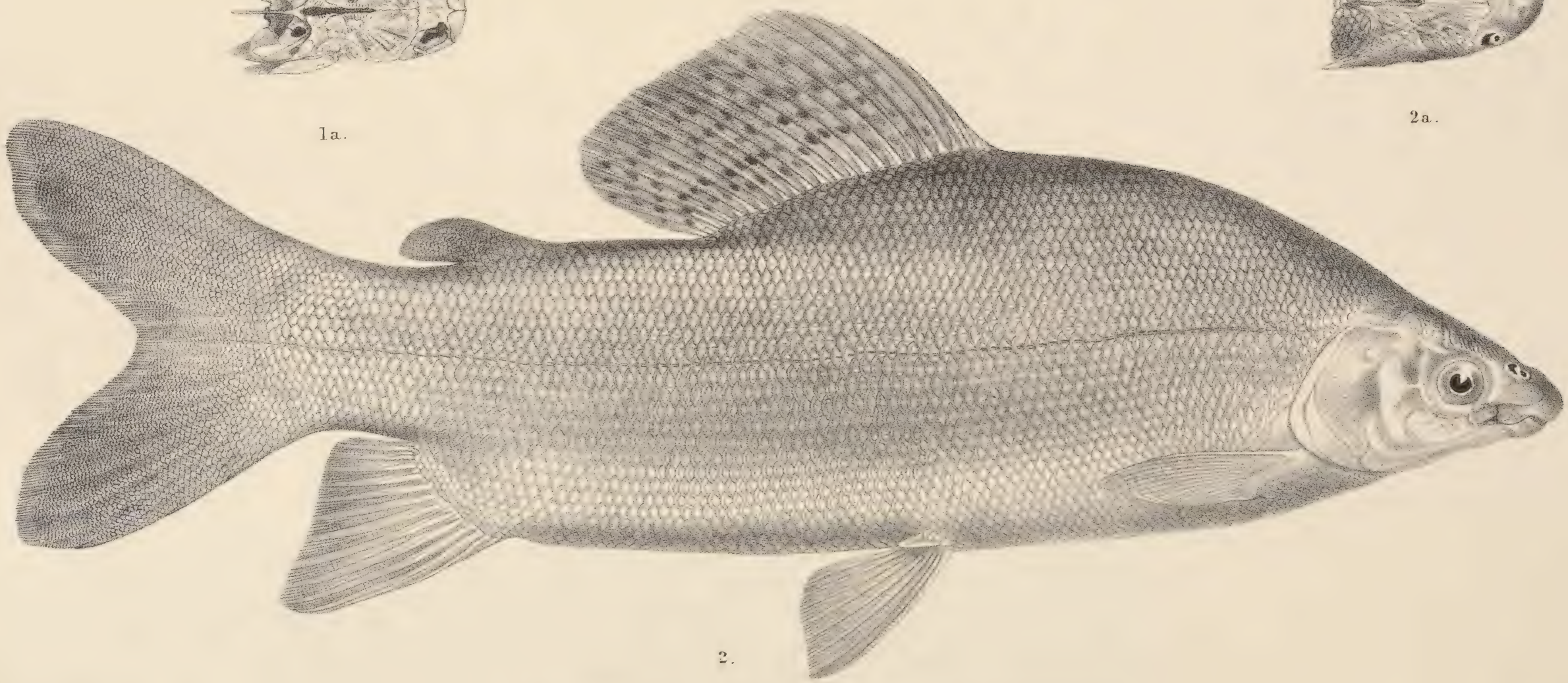


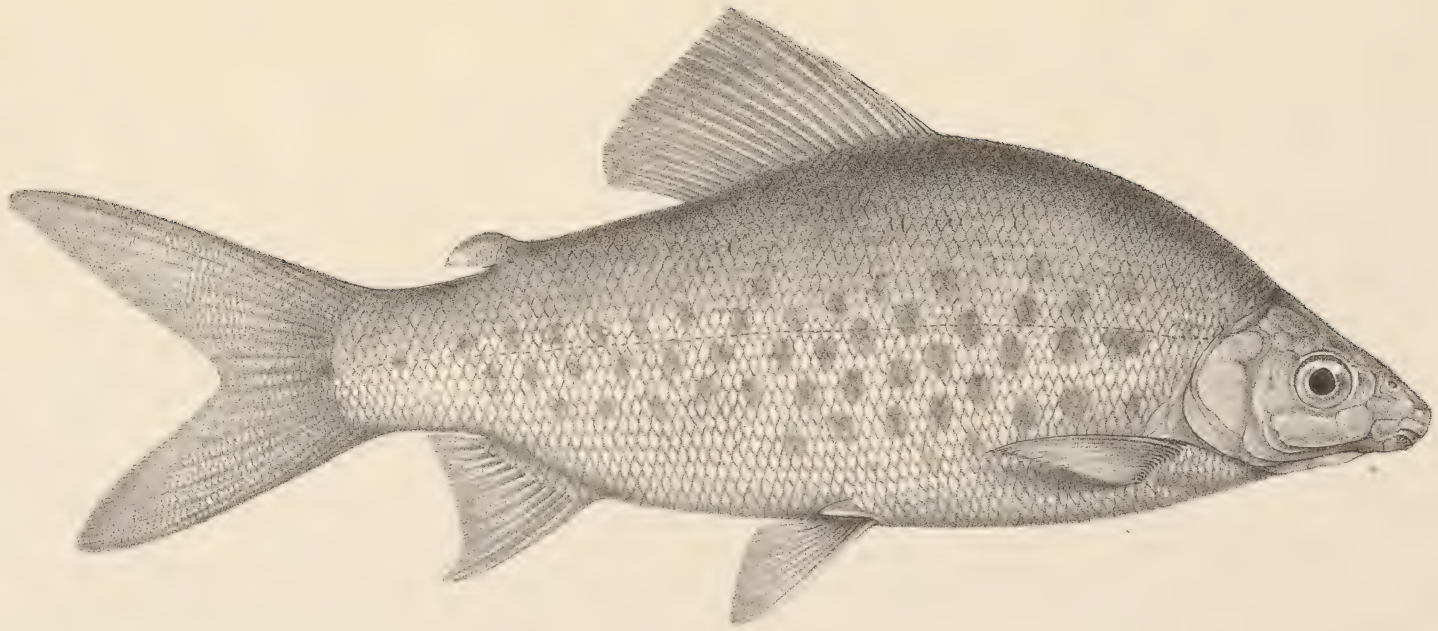
2.

P. Smit del. et lith.

J. Green imp.

1. DISTICHODUS NILOTICUS. 2. D. ROSTRATUS.

Fishes of the Nile.



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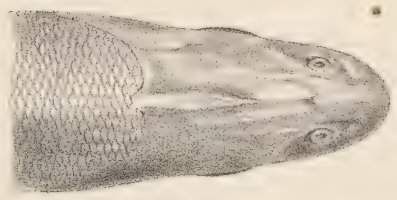

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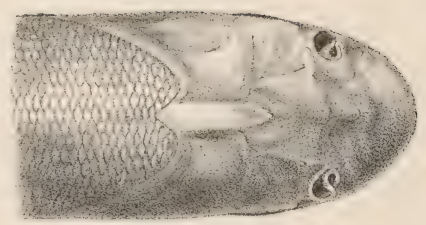

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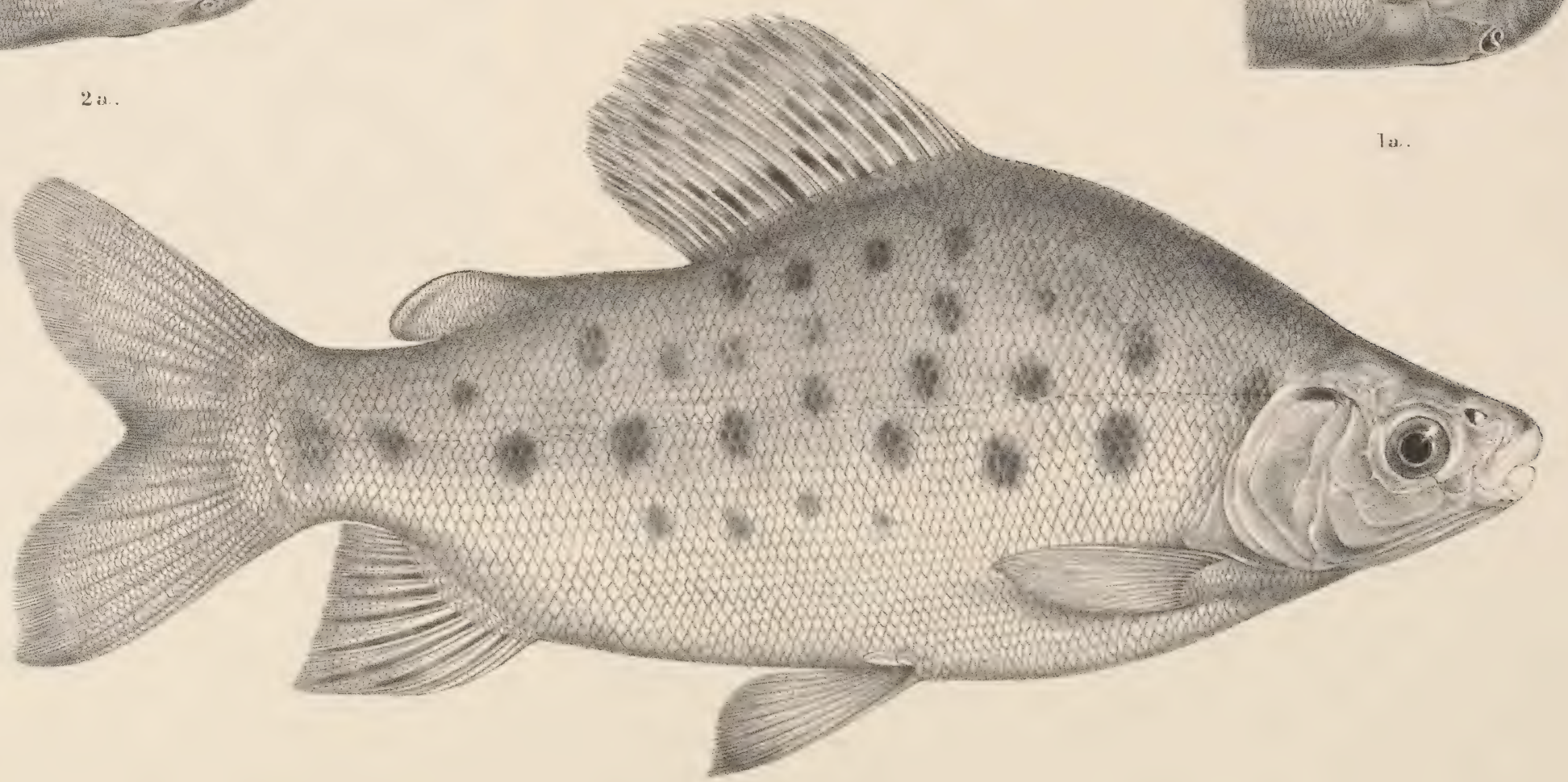
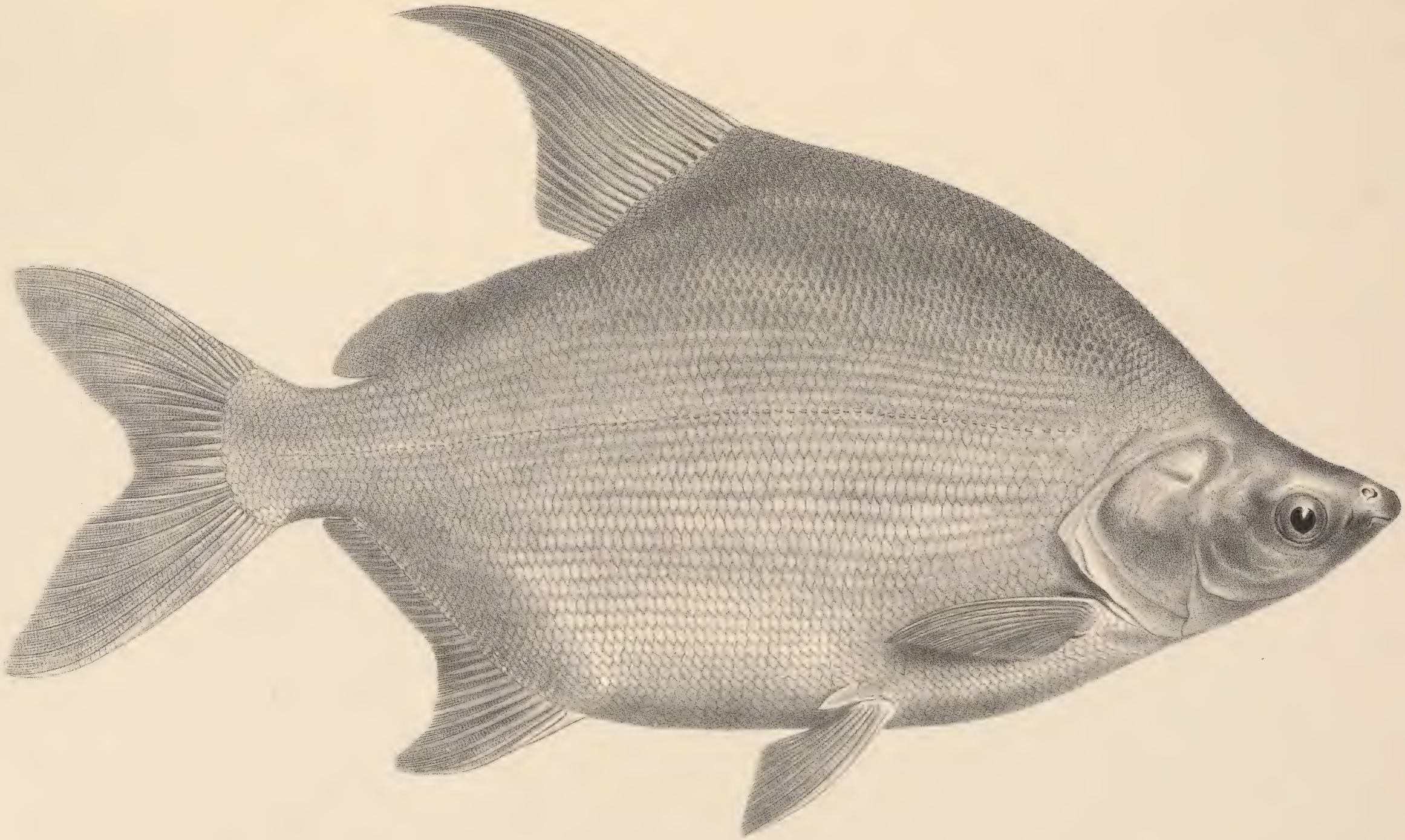


1.

J. Green del et lith.

1. DISTICHODUS BREVIPINNIS. 2. D. ENGYCEPHALUS.

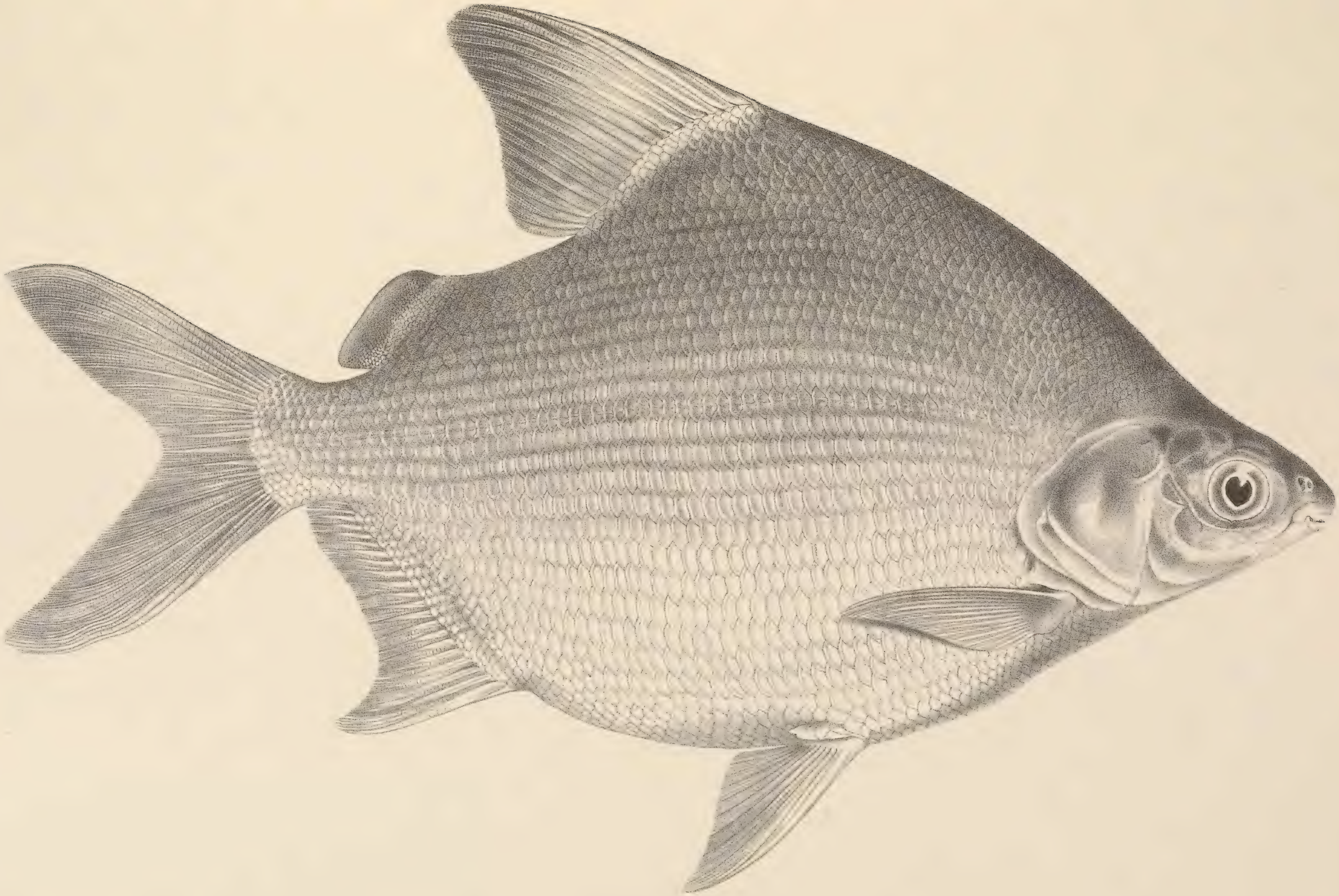
J. Green imp.



P. Smit del. et lith.

CITHARINUS CITHARUS.

J. Green imp.



P. Smit del. et lith.

CITHARINUS LATUS.

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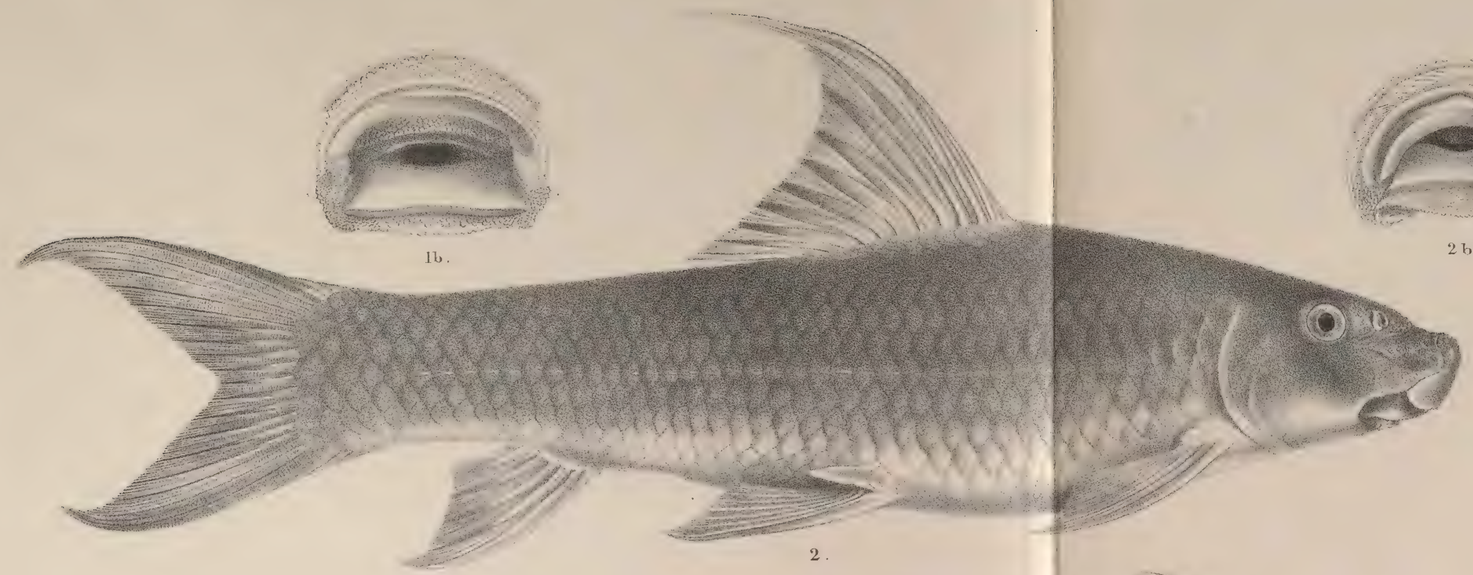

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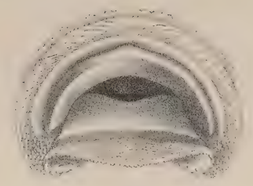

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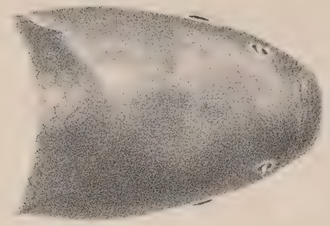


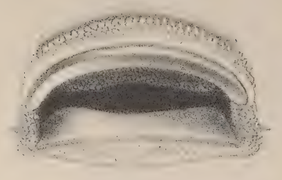
1a.

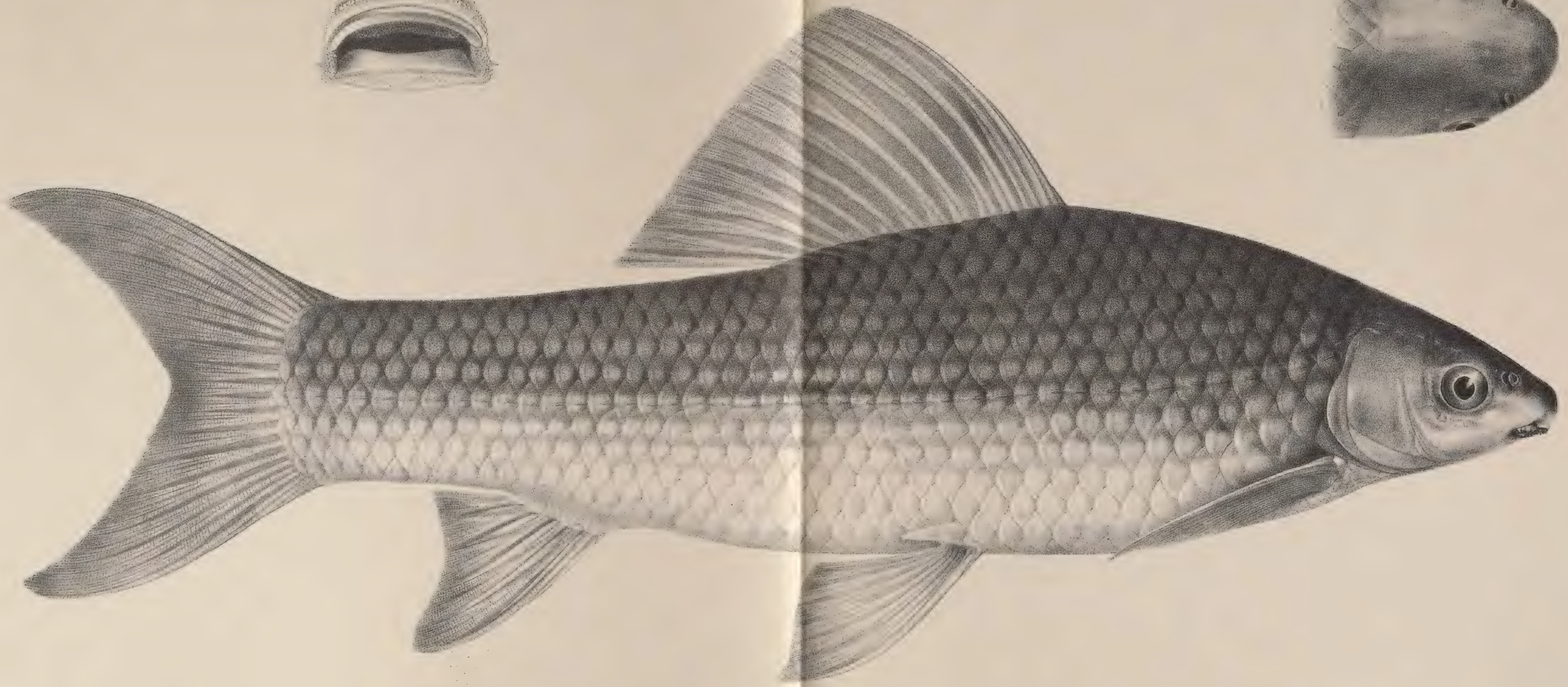
1.

P. Smit del. et lith.

1. LABEO NILOTICUS. 2. L. FORSKALII.

J. Green. imp.

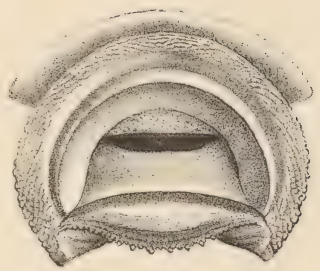


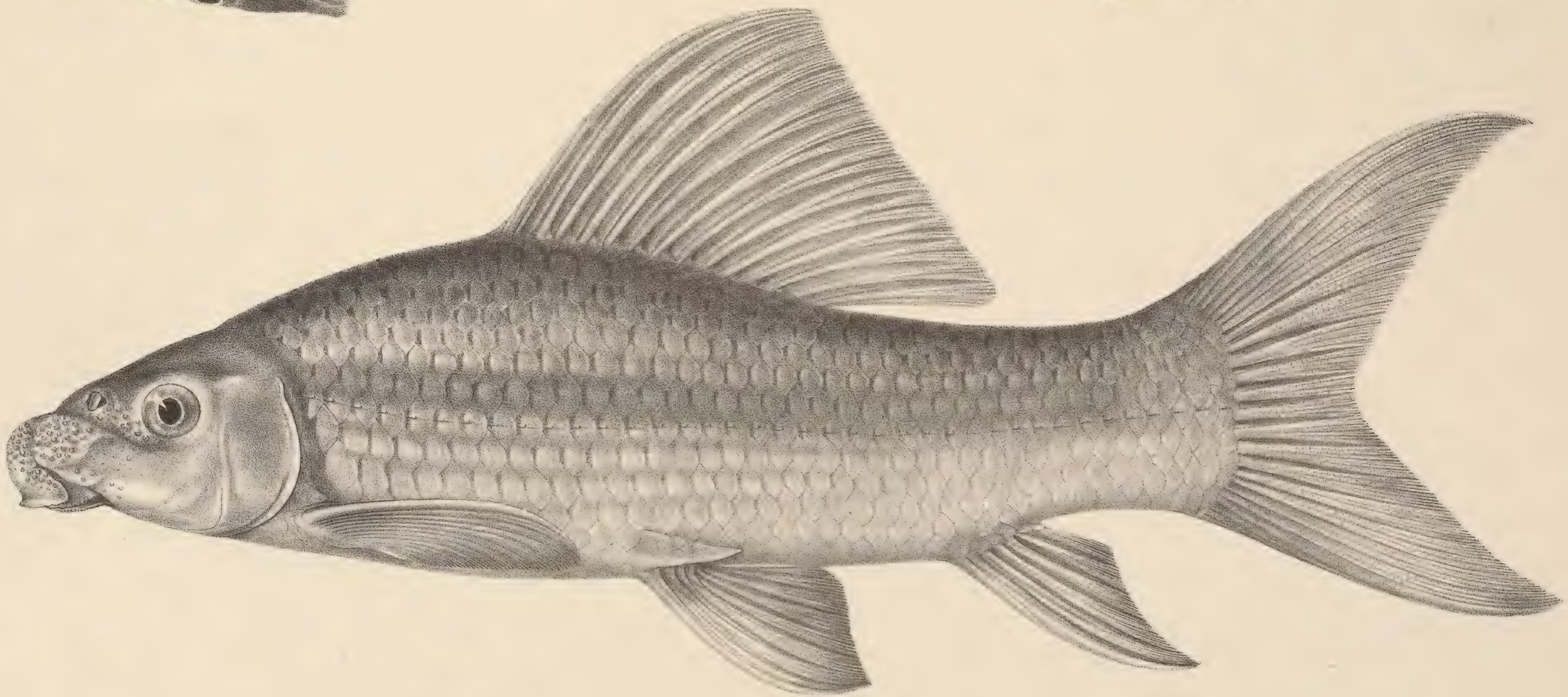


P. Smit del. et lith.

LABEO HORIE.

J. Green imp.

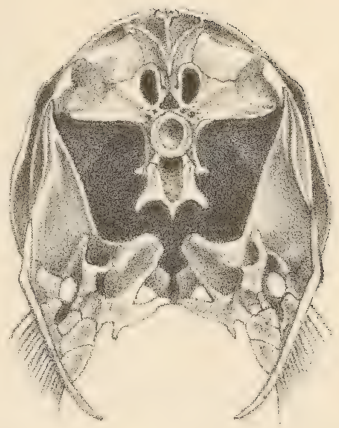




J. Green del. et lith.

J. Green imp.

LABEO COUBIE.



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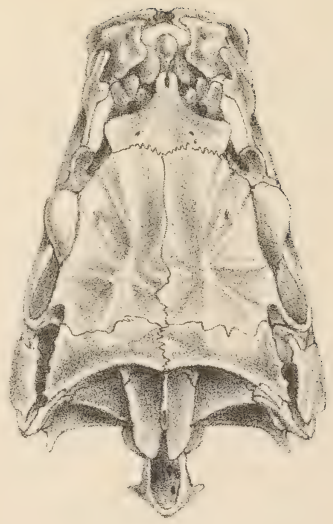
d.

c.



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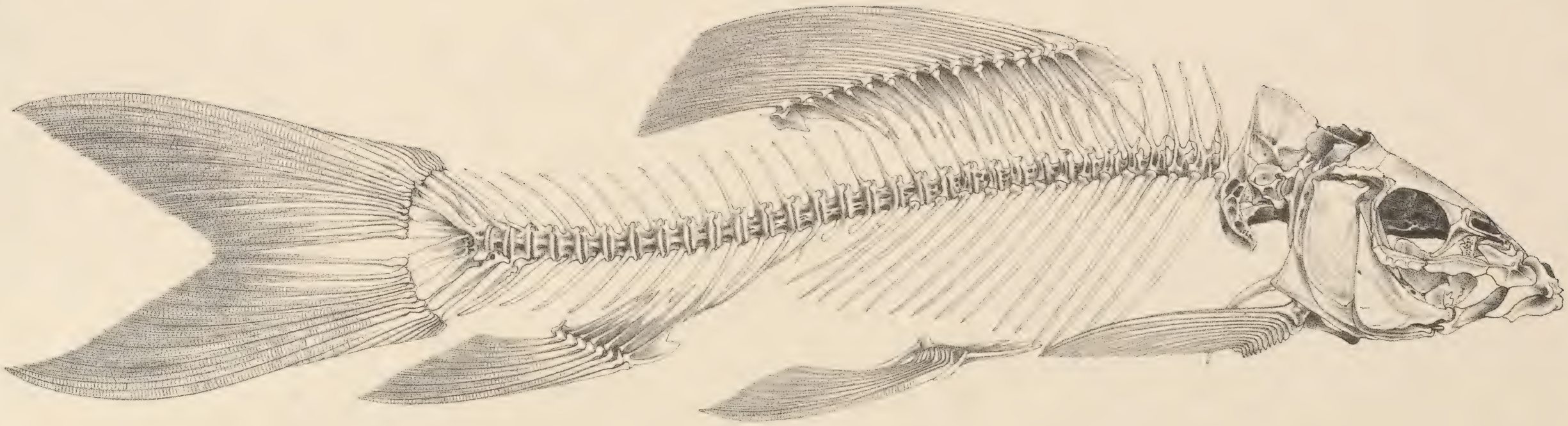
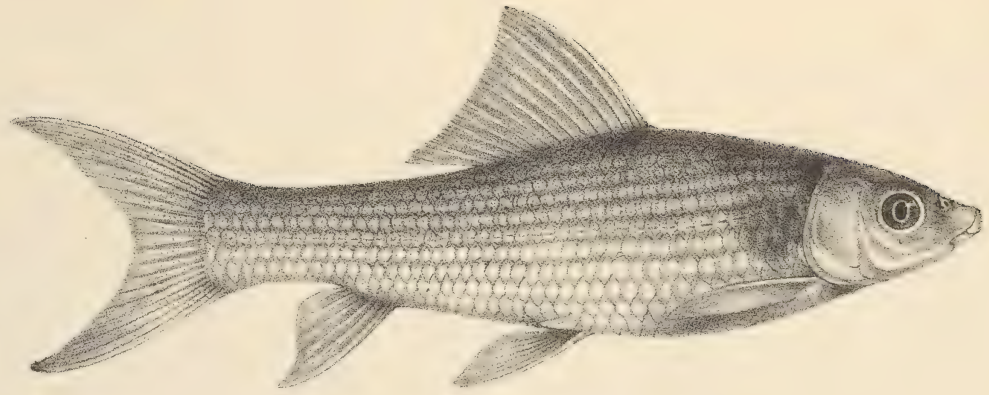


J. Green del. et lith.

LABEO COUBIE.

J. Green imp.



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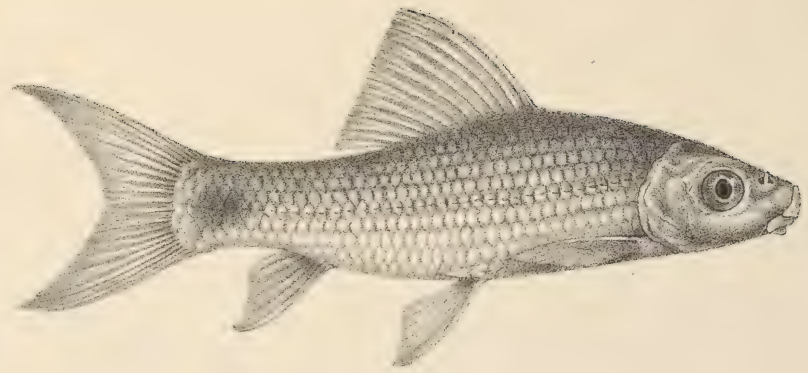

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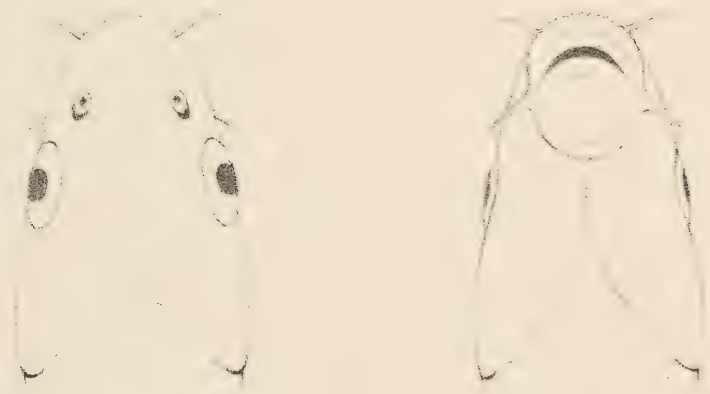


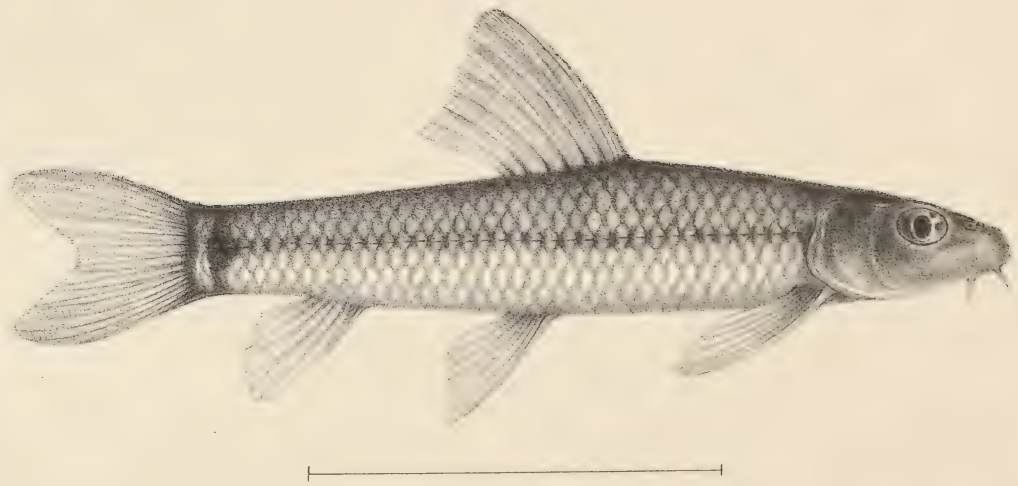
4a.

4b.

3.

5a.

5b.



4.

5.

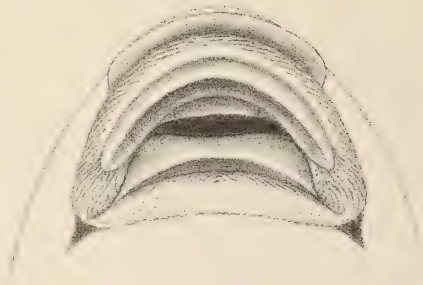
J. Green del. et lith.

J. Green imp.

1. LABEO HORIE. 2. L. COUBIE. 3. L. FORSKALII. 4. DISCOGNATHUS VINCIGUERRÆ. 5. D. QUADRIMACULATUS.

2b.

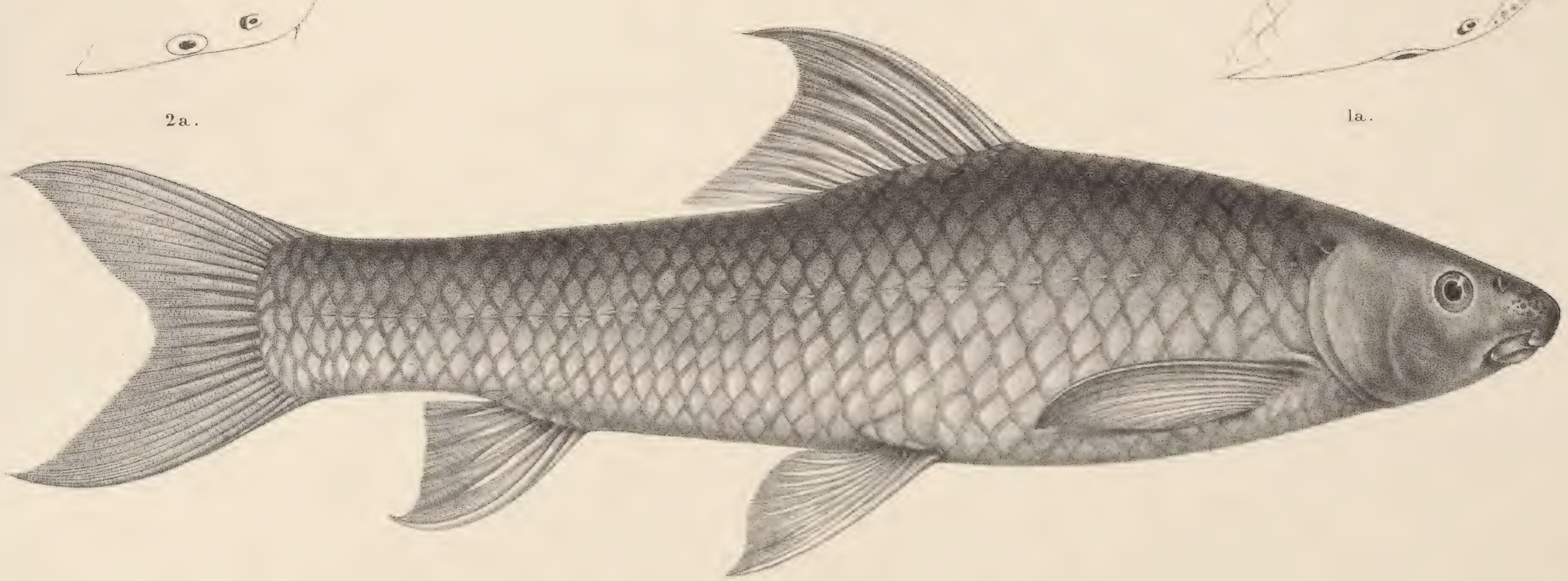
2.



1b.

2a.

1a.

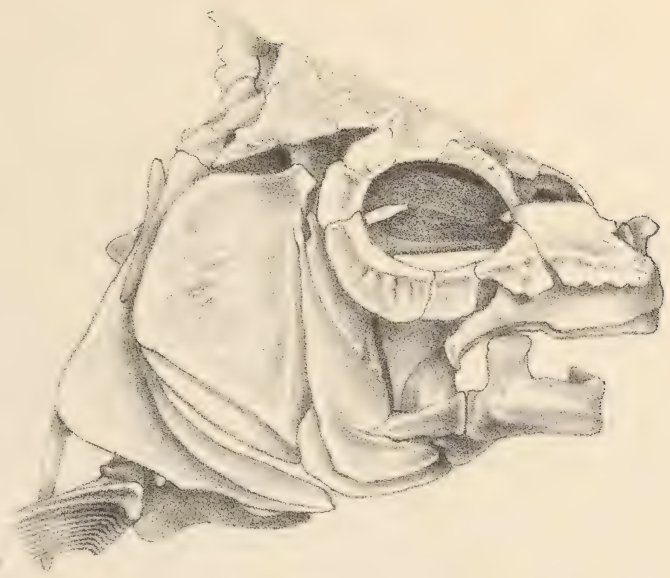


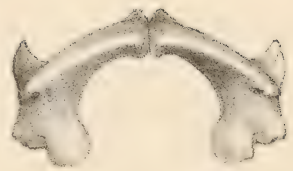
1.

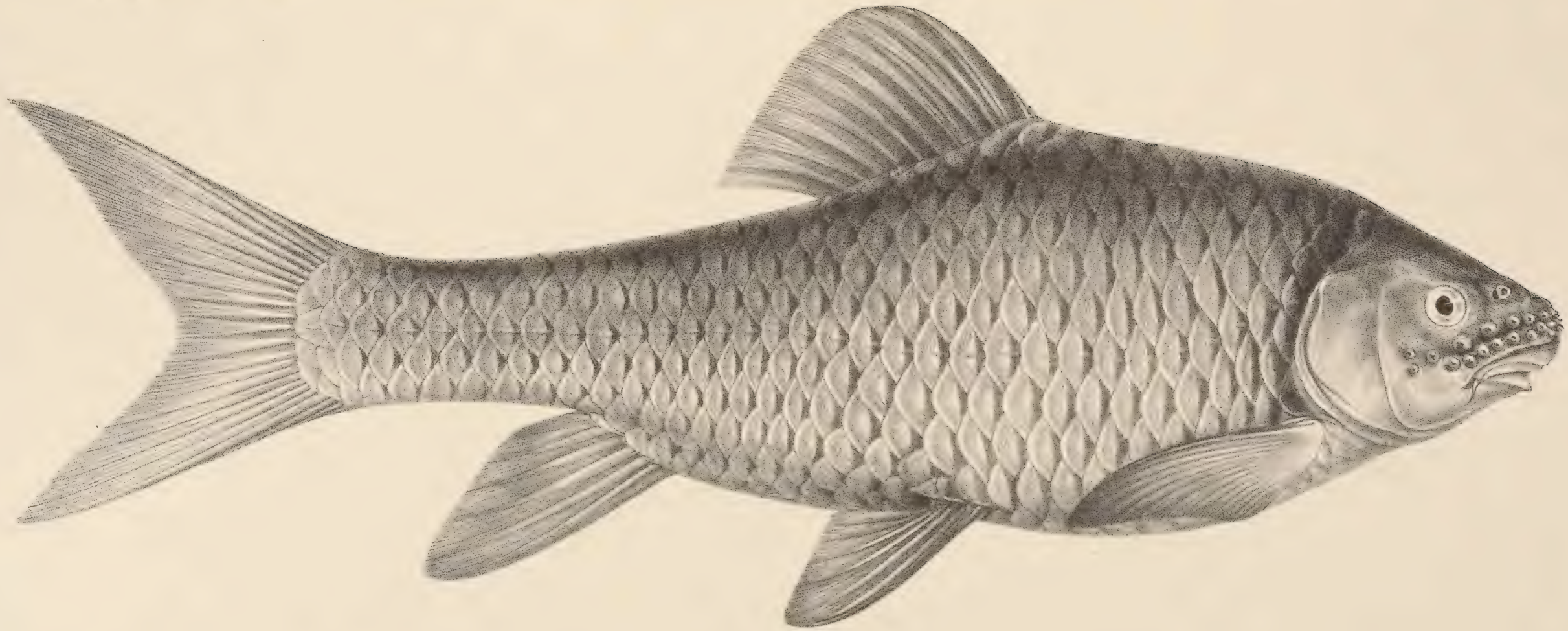
J. Green del. et lith.

1. LABEO VICTORIANUS. 2. DISCOGNATHUS JOHNSTONI.

J. Green. imp.



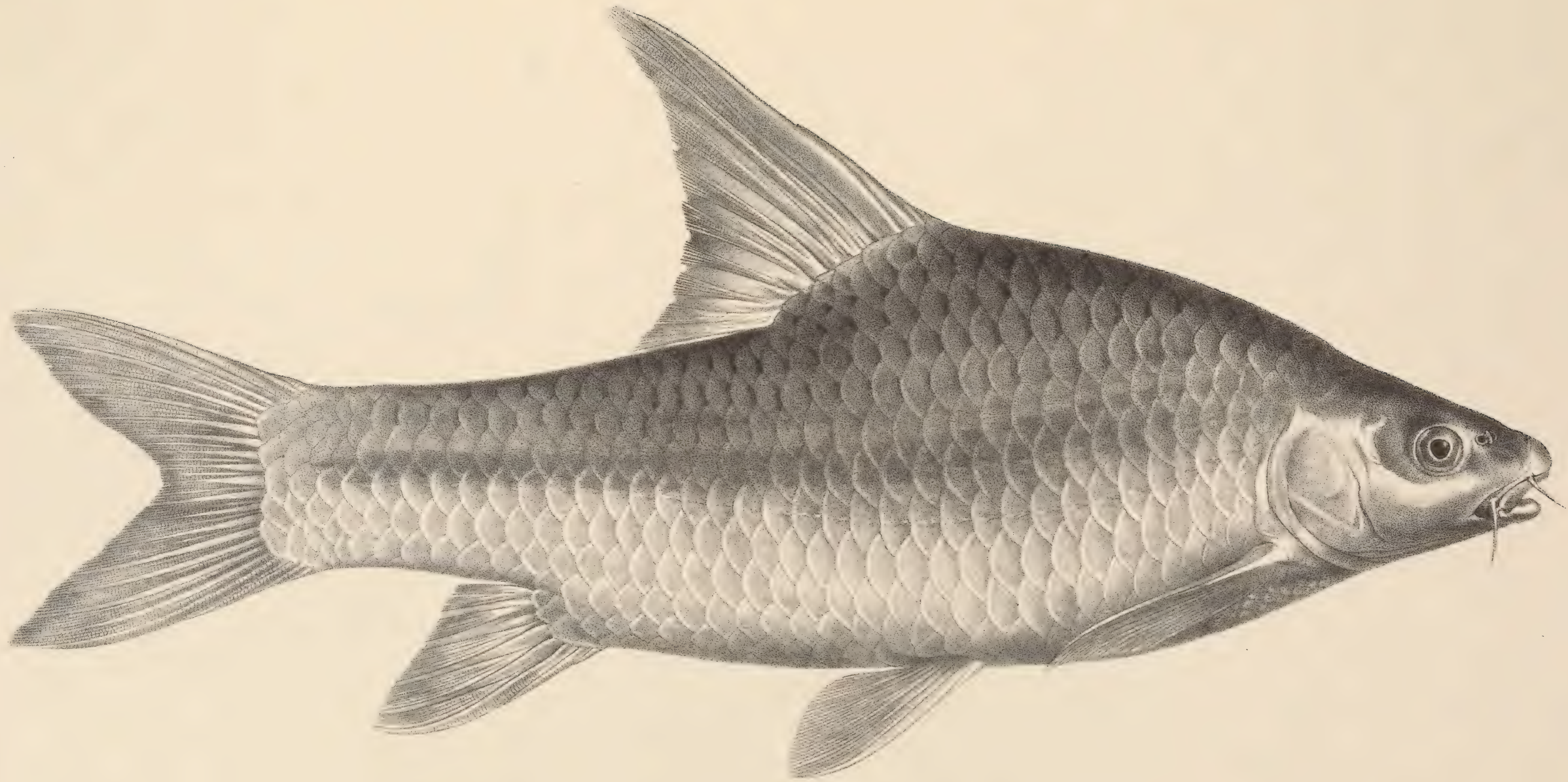




J. Green del. et lith.

VARICORHINUS BESO.

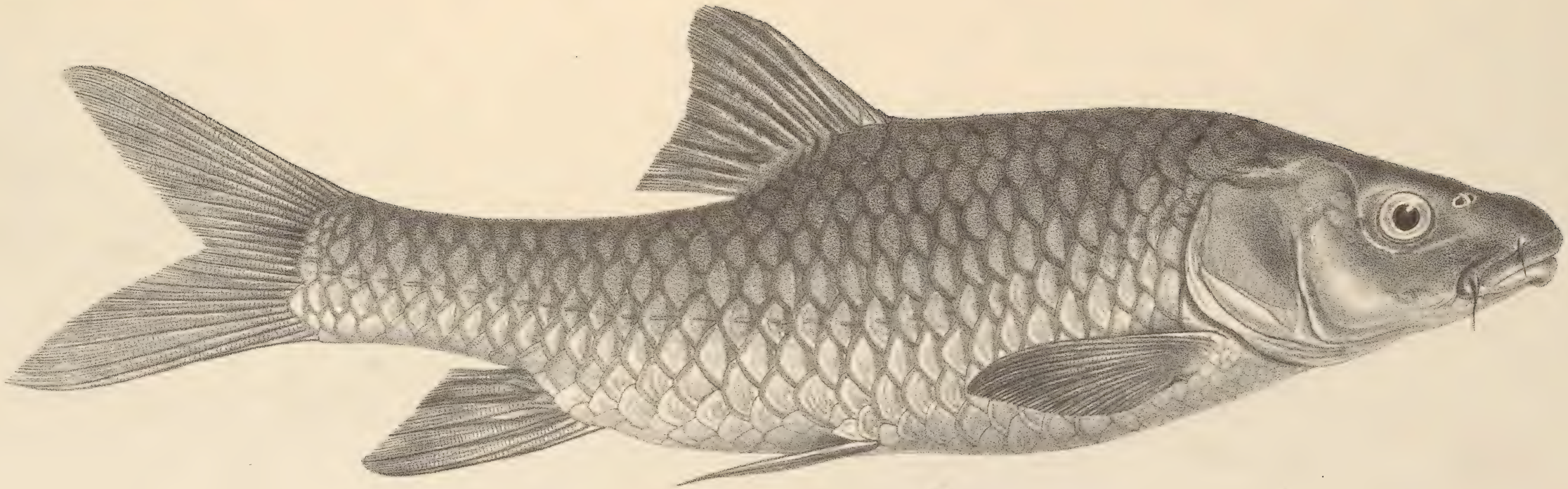
J. Green imp.



P. Smit del. et lith.

BARBUS BYNNI.

J. Green imp.



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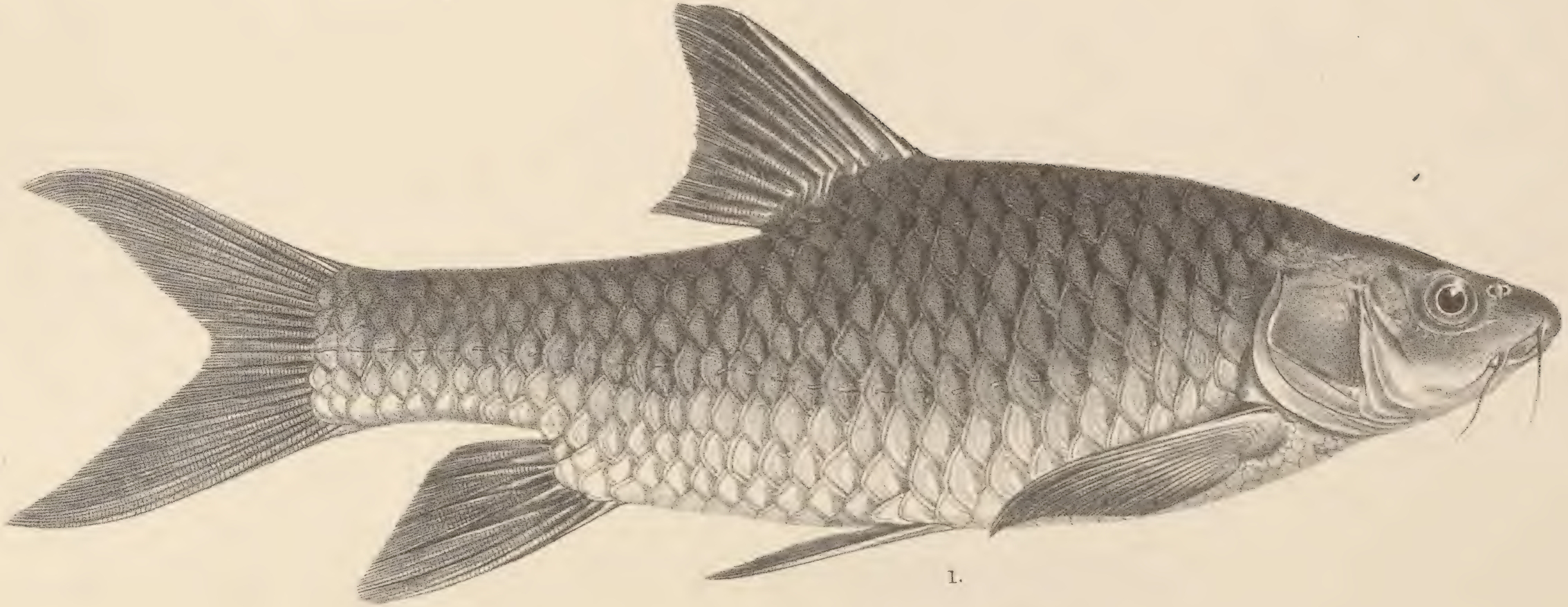
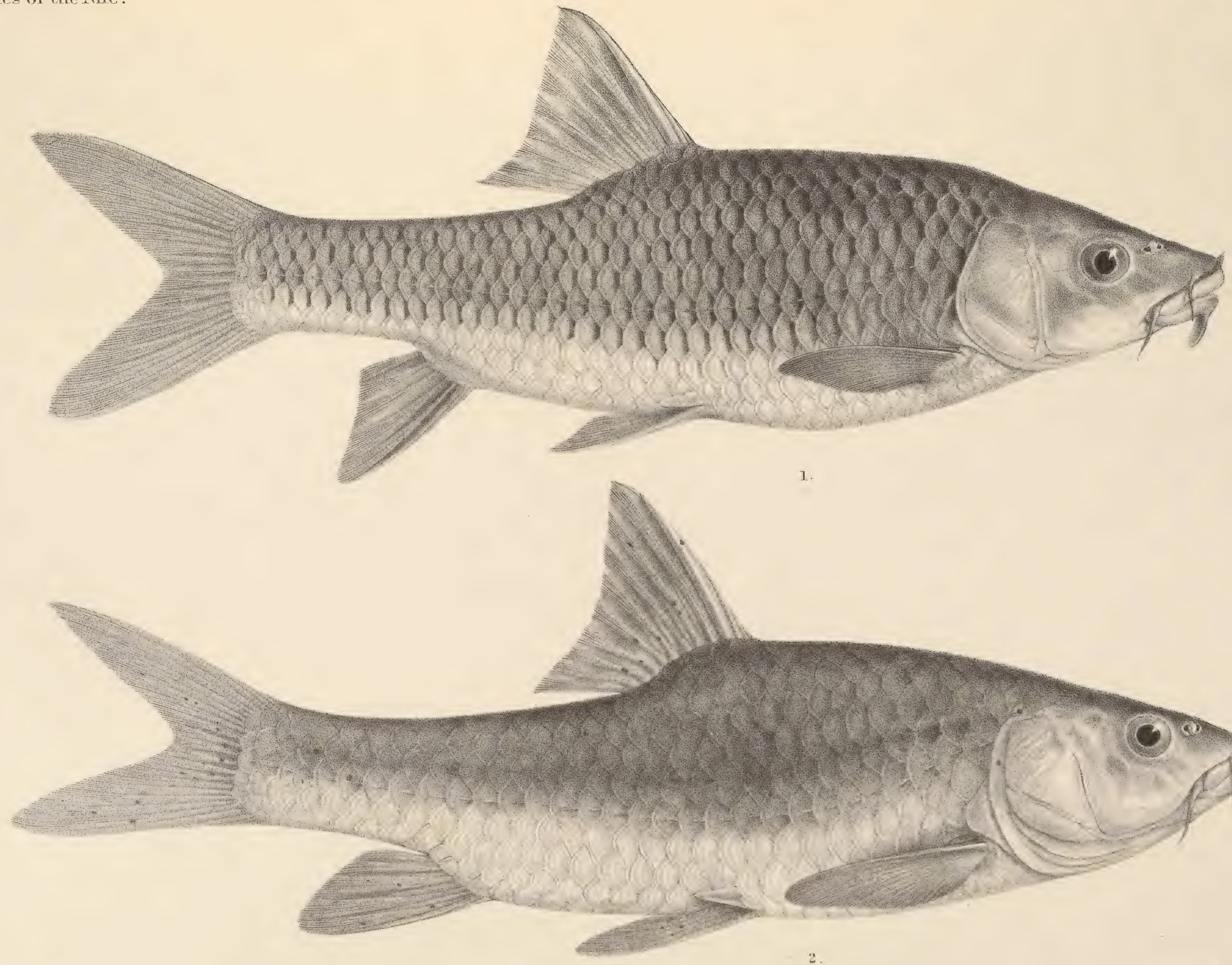


1.

P. Smit del. et lith.

J. Green imp.

1. BARBUS DUCHESNII. 2. B. BREVIBARBIS.



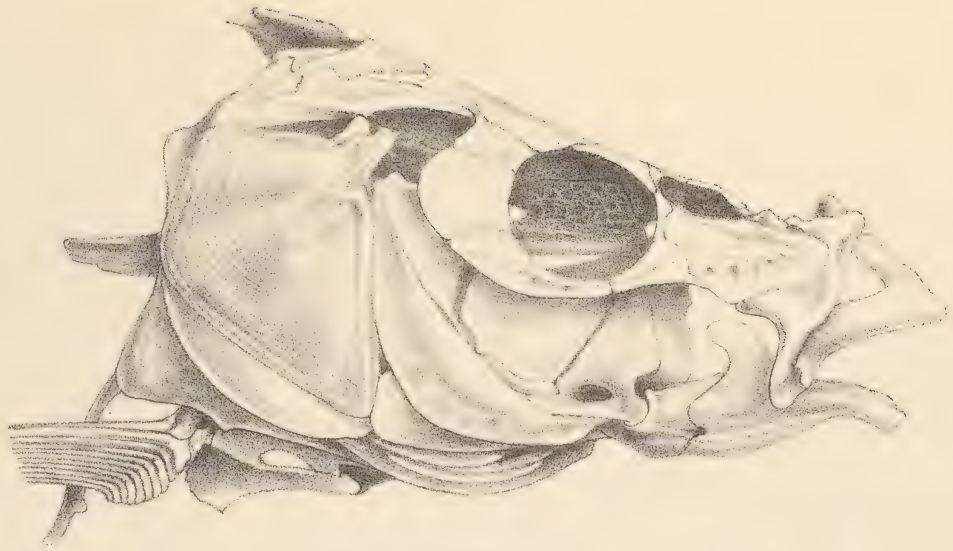
1.

2.

J. Green del. et lith.

J. Green imp.

1. BARBUS LOBOGENYS. 2. B. GUDARICUS.



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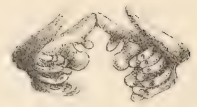

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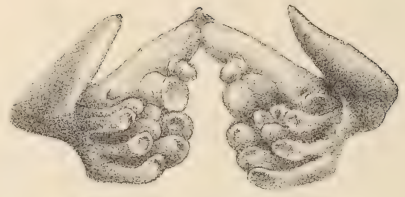

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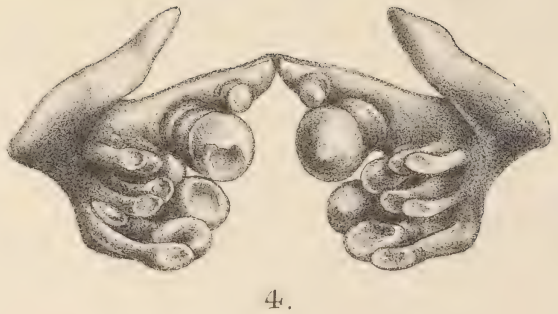

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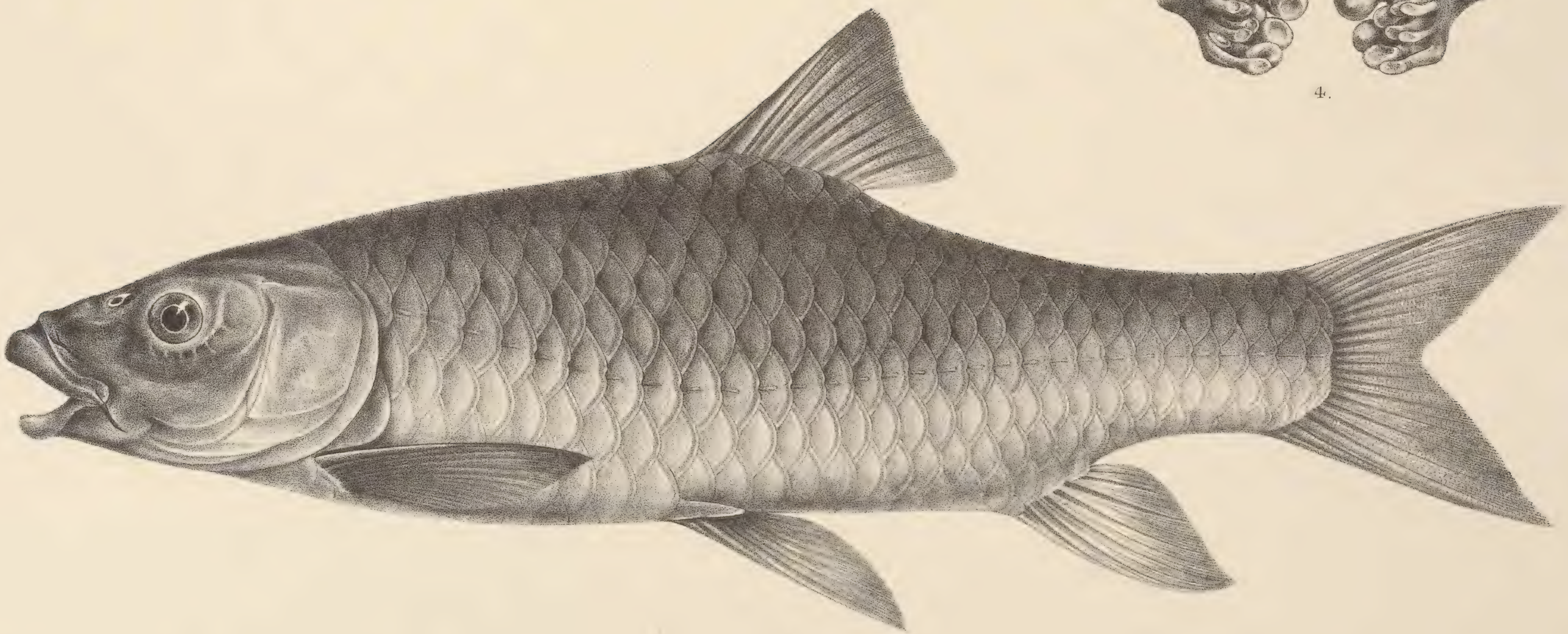
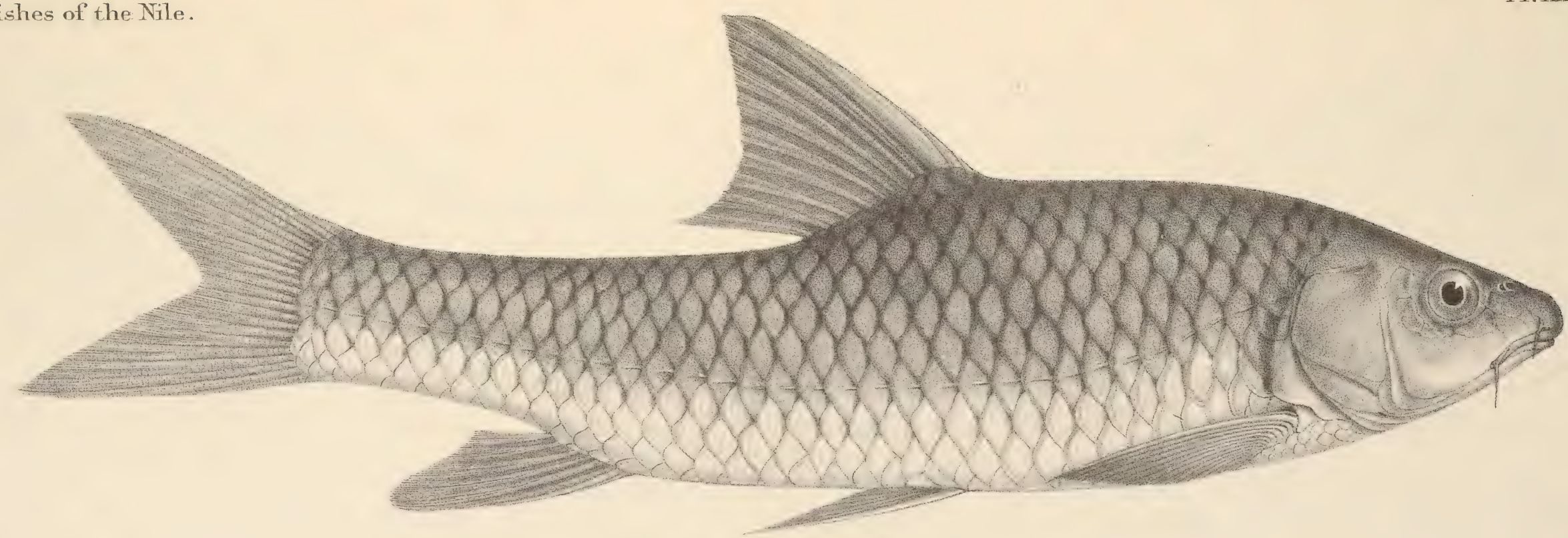


1.

J. Green del. et lith.

J. Green imp.

1. BARBUS RADCLIFFII. 2. B. NEDGIA. 3. B. BYNNI. 4. B. SURKIS. 5. B. LEPTOSOMA.



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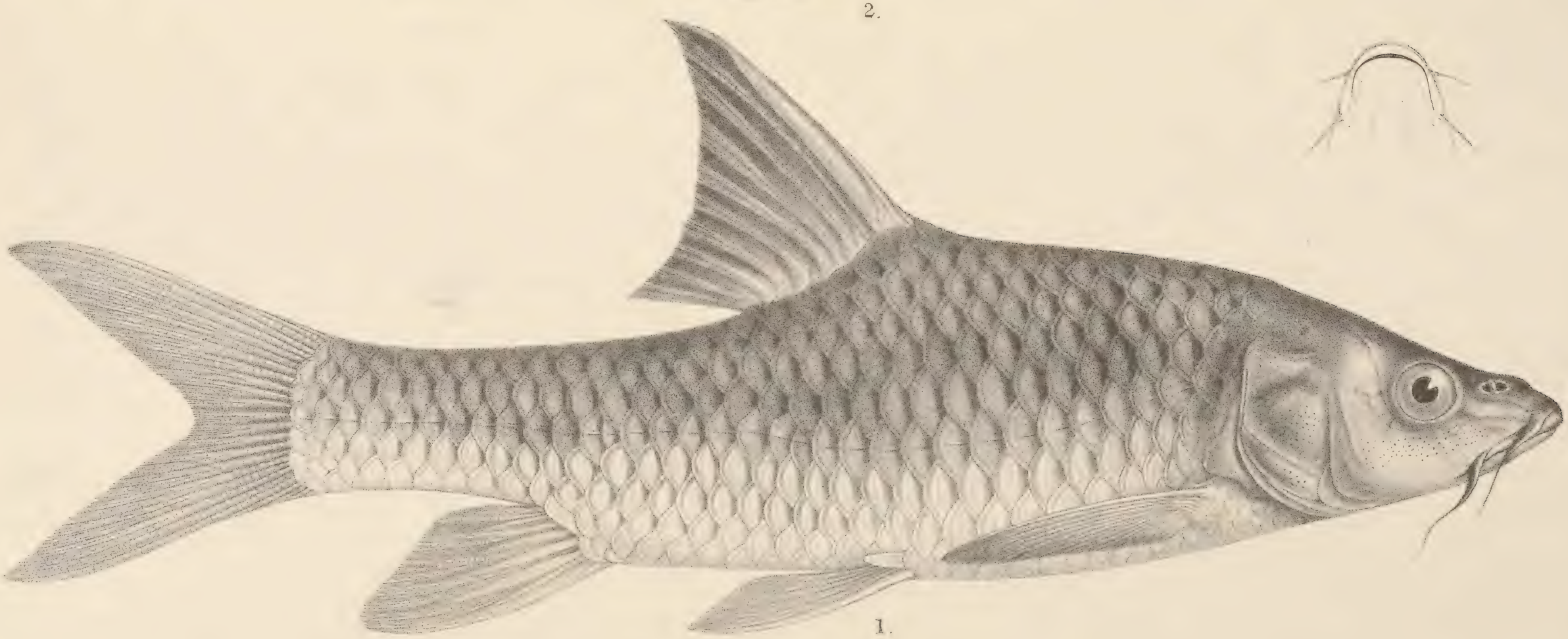
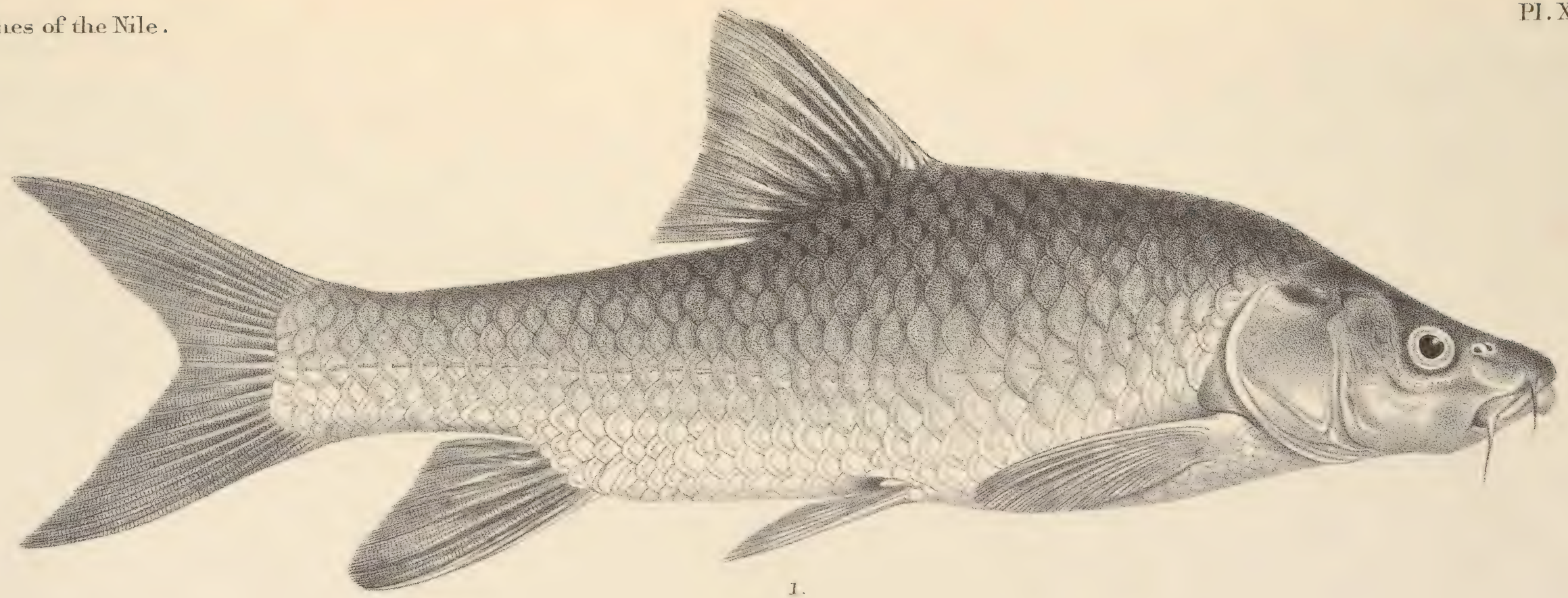


1.

J. Green del. et lith.

J. Green imp.

1. BARBUS EUMYSTUS. 2. B. PLAGIOSTOMUS.



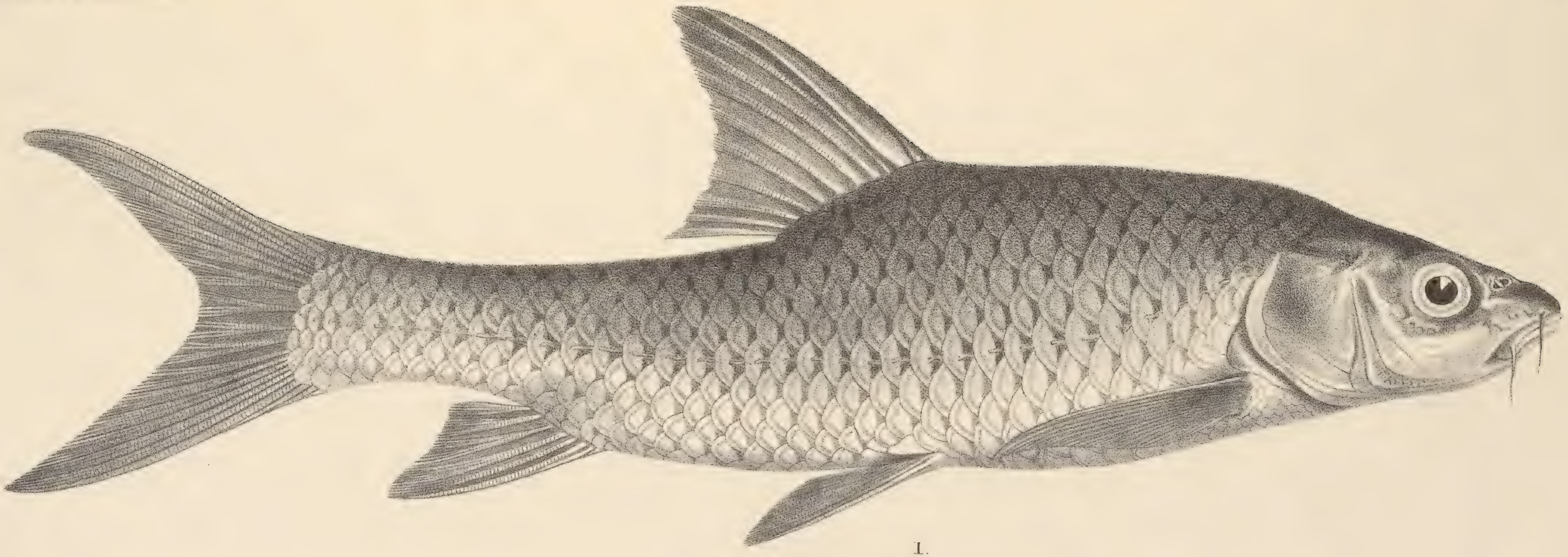
1.

2.

P. Smit del. et lith.

J. Green imp.

1. BARBUS AFFINIS. 2. B. INTERMEDIUS.



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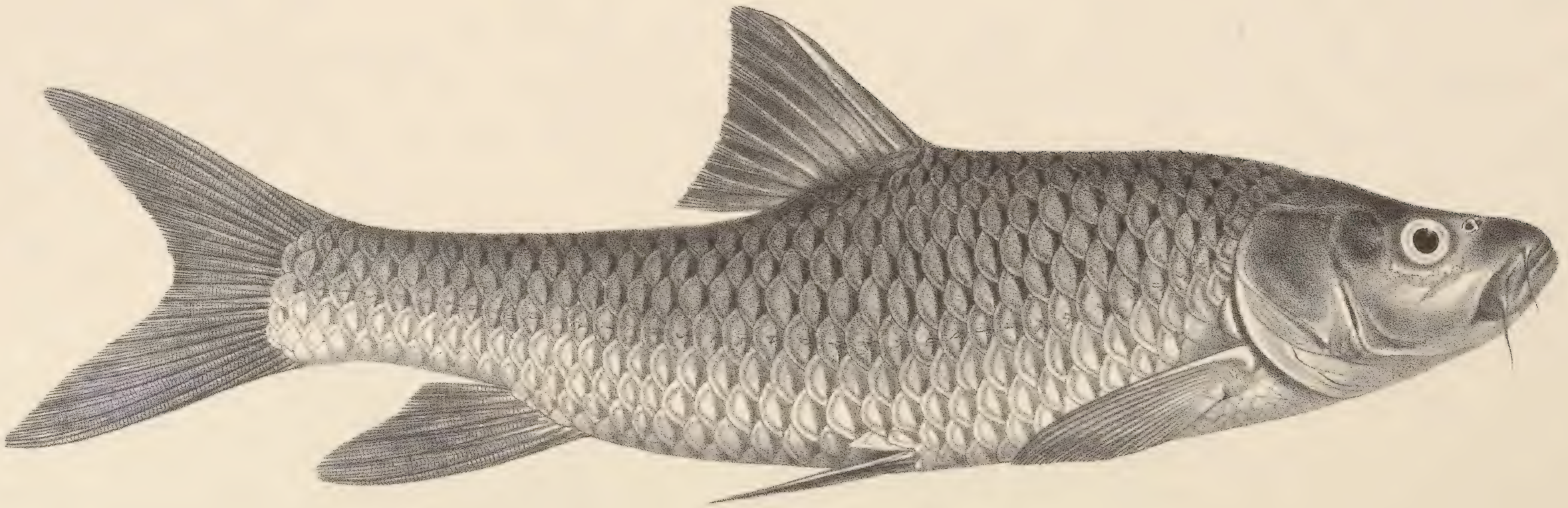

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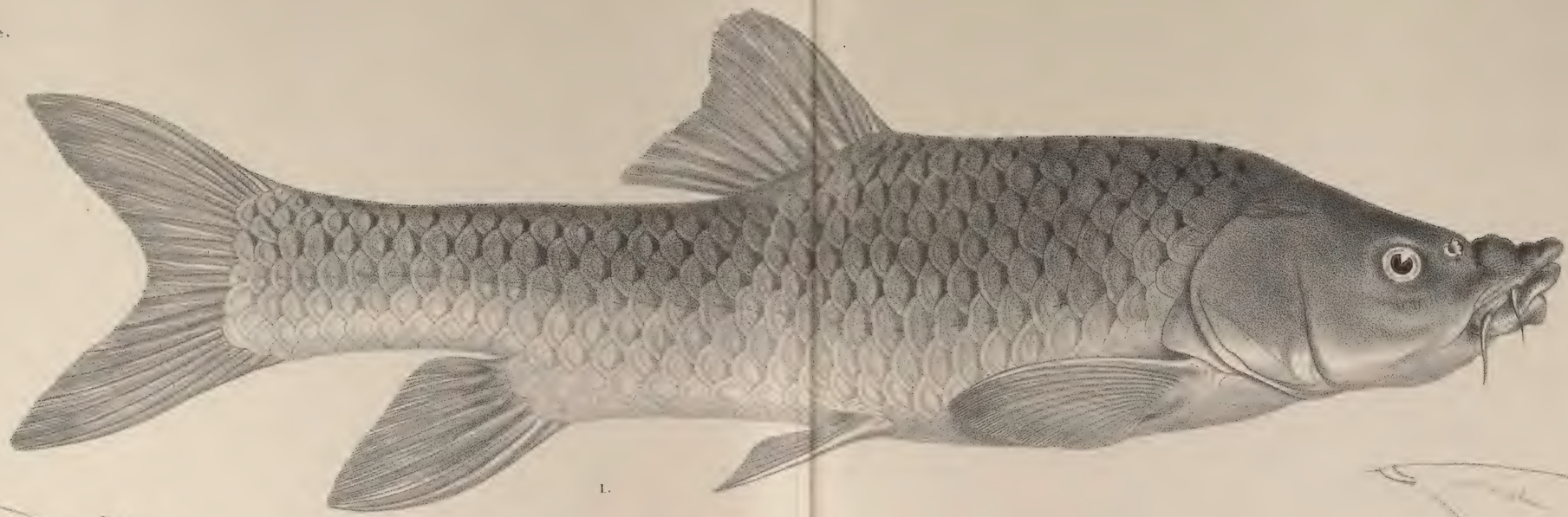
P. Smit del. et lith. J. Green imp.

1. BARBUS LEPTOSOMA. 2. B. PLATYSTOMUS.



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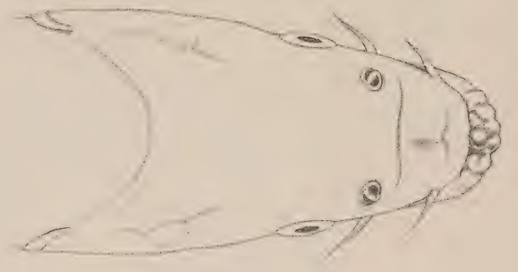

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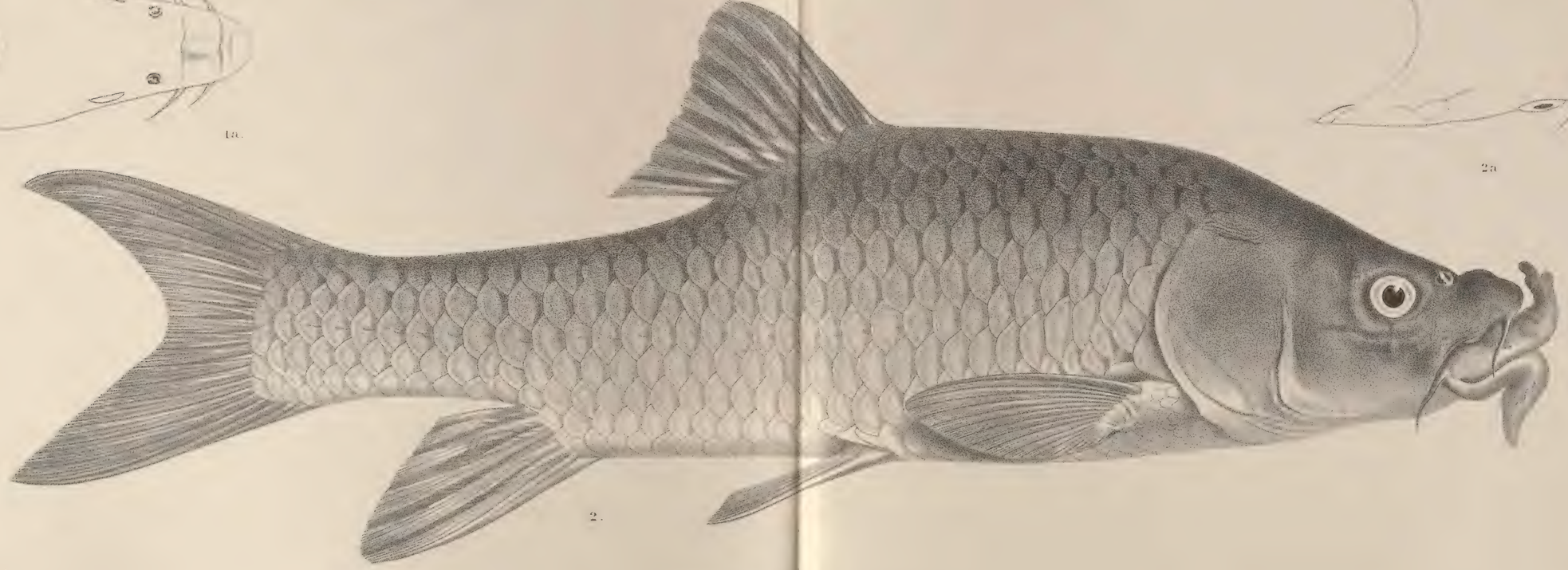

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P.Smit del.et lith.

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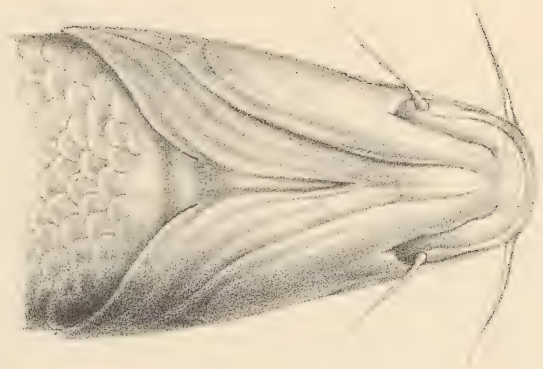
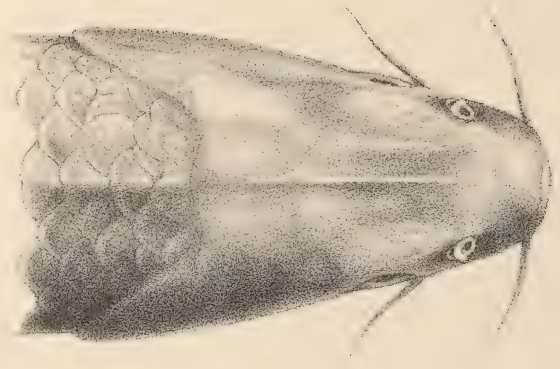
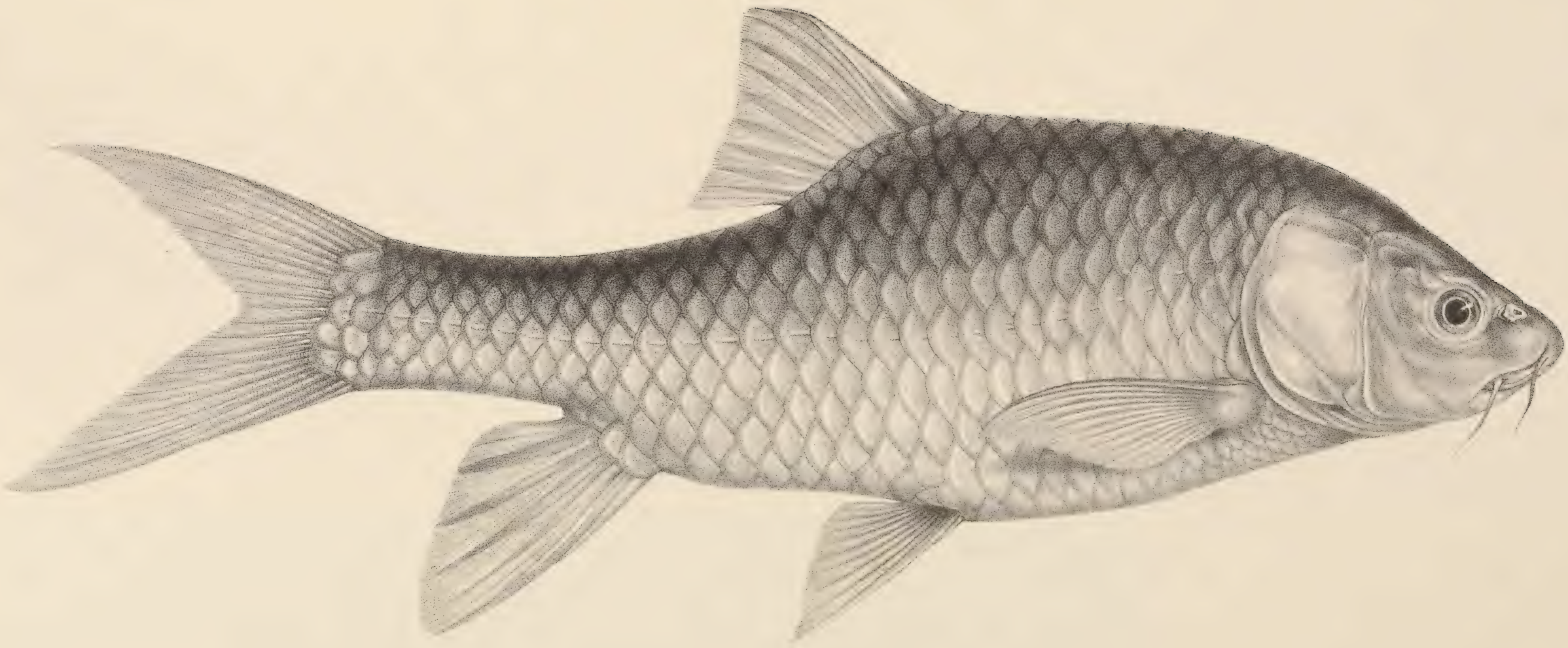
d.Green imp.



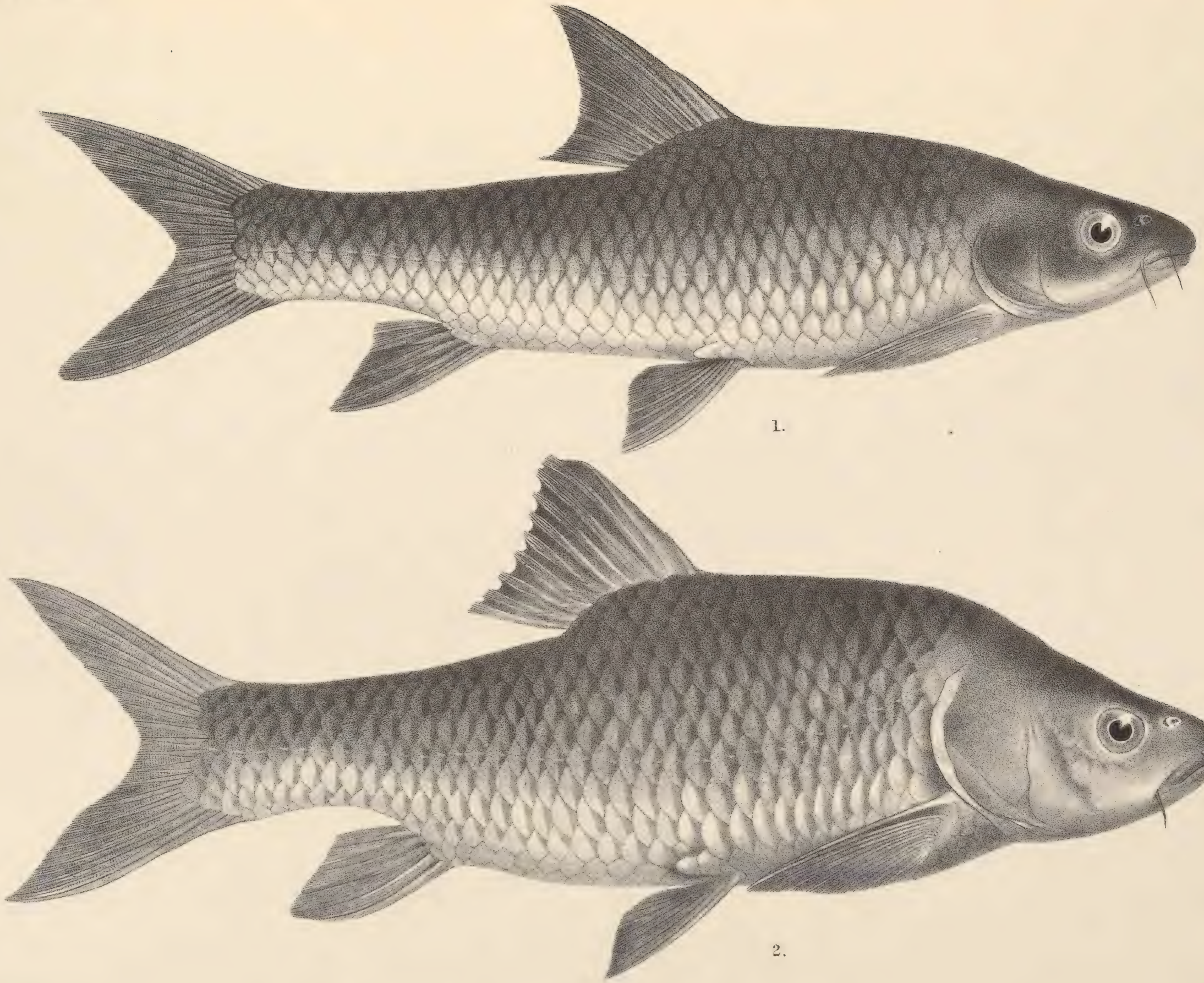




J. Green del. et lith.

BARBUS SURKIS.

J. Green imp.



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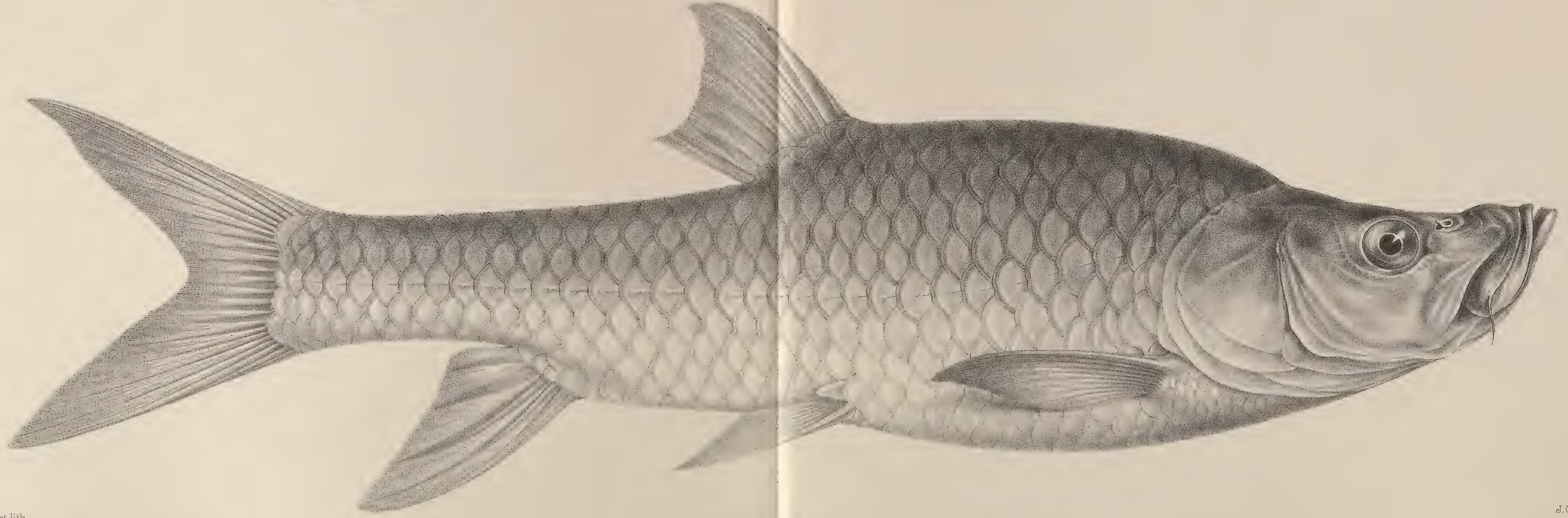
2.

P. Smit del. et lith.

J. Green imp.

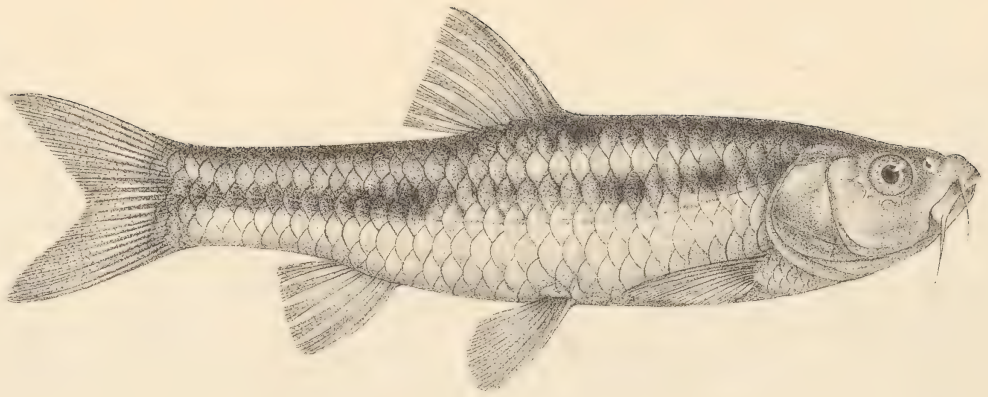
1. BARBUS FERGUSONII. 2. B. EDUARDIANUS.



J. Green del. et lith.

BARBUS GORGUARI.

J. Green imp.



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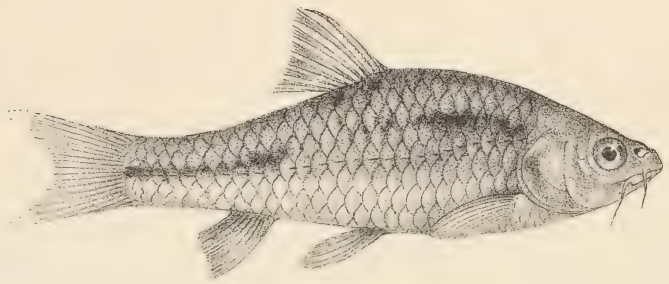

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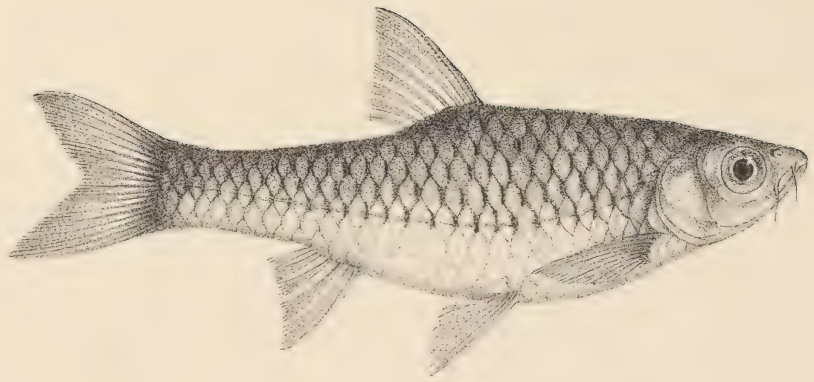

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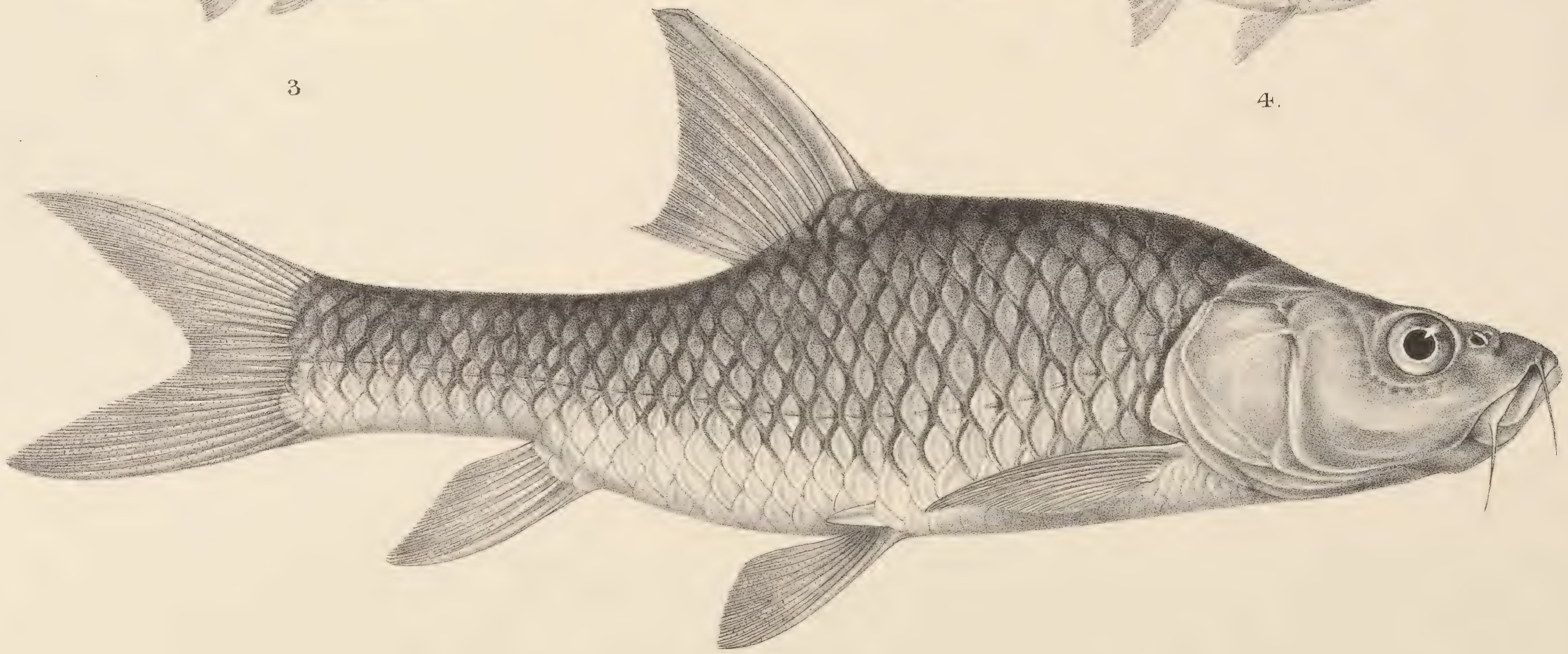

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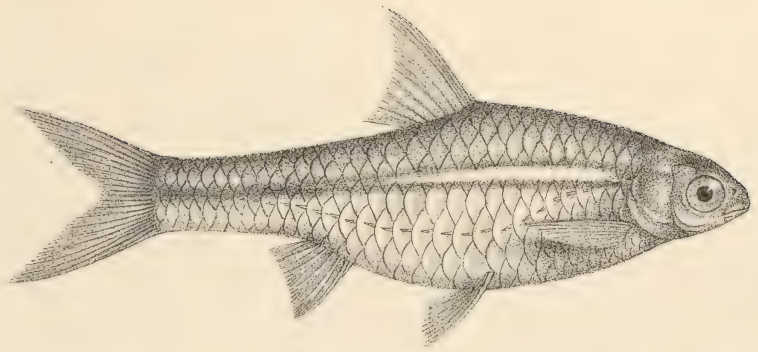
J. Green del. et lith.

J. Green imp.

1. BARBUS ZAPHIRI. 2. B. PORTALI. 3. B. CARPIO. 4. B. MINCHINI.



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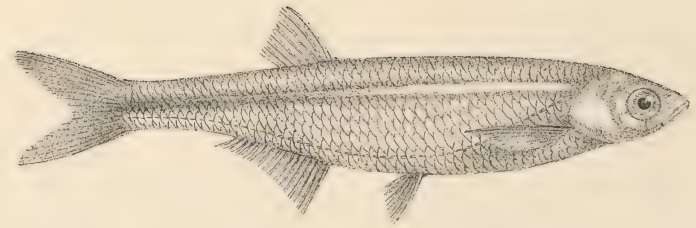

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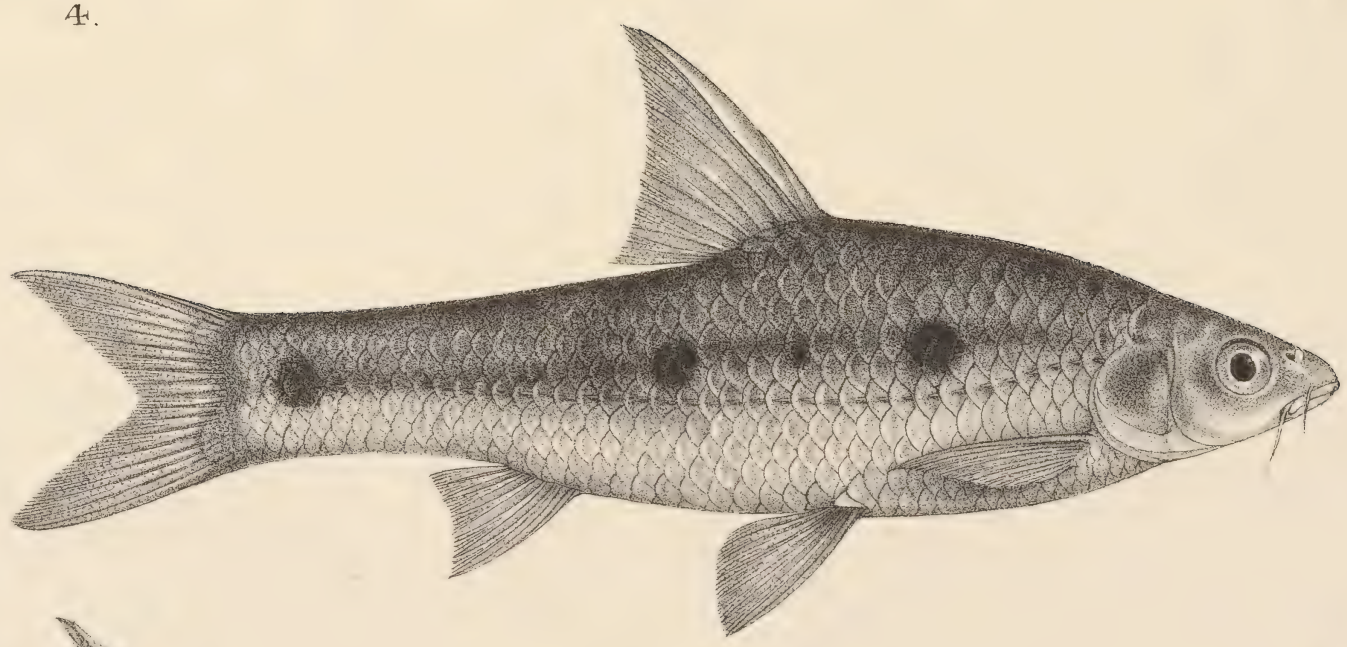

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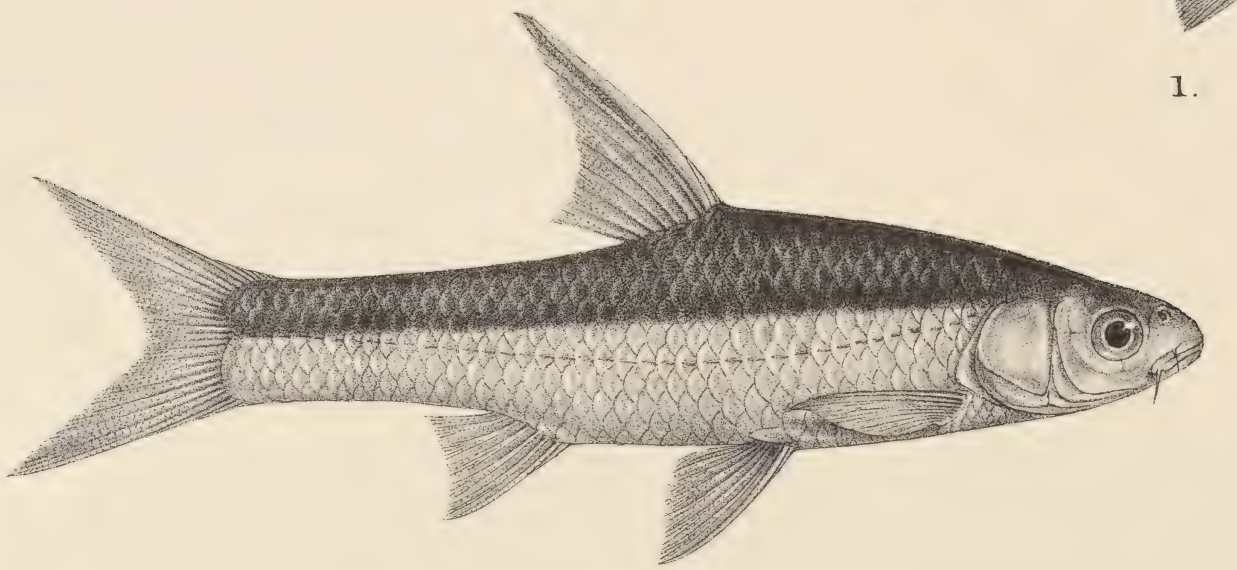

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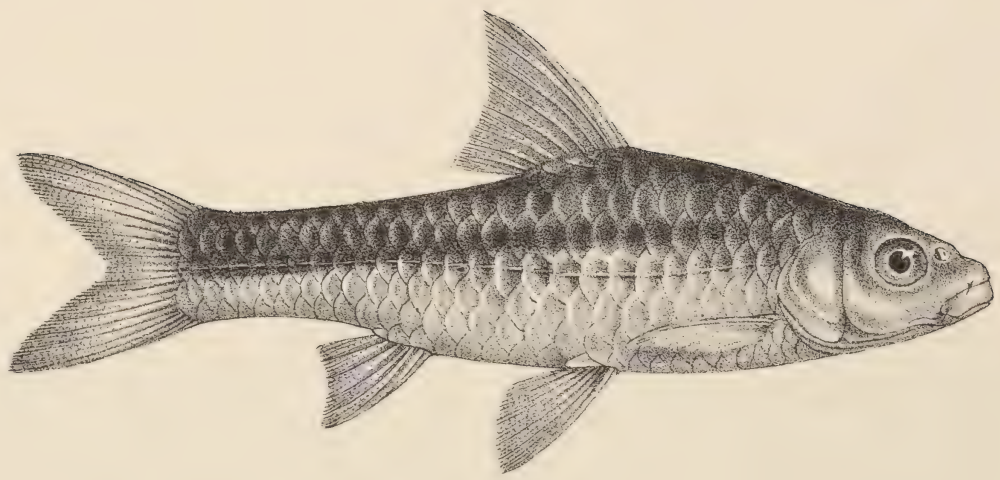

3.

J. Green del. et lith.

J. Green. imp.

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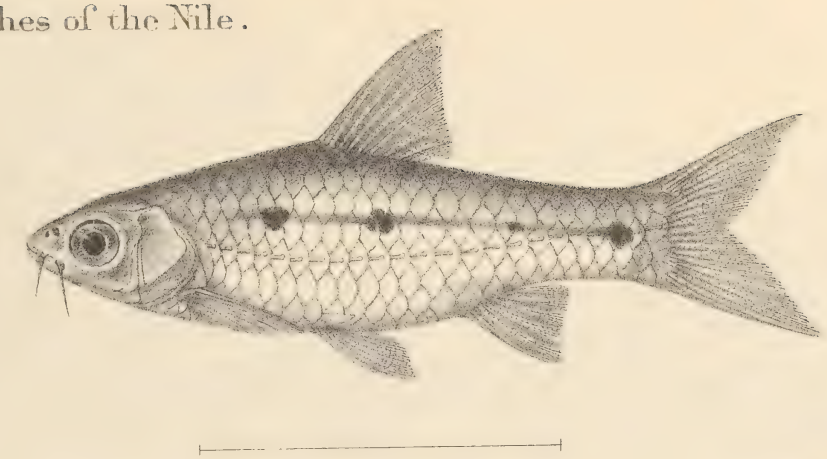

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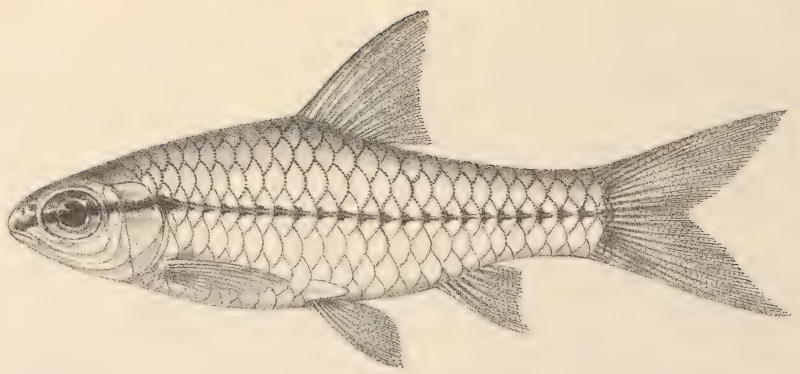

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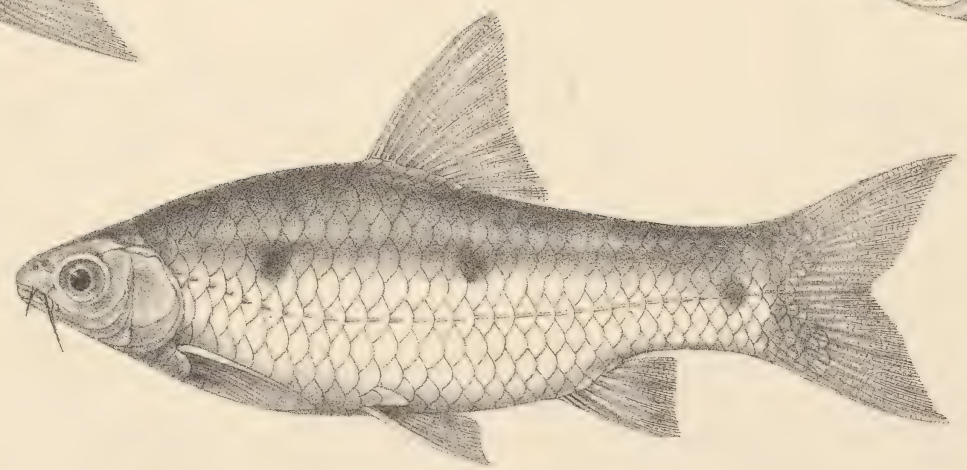

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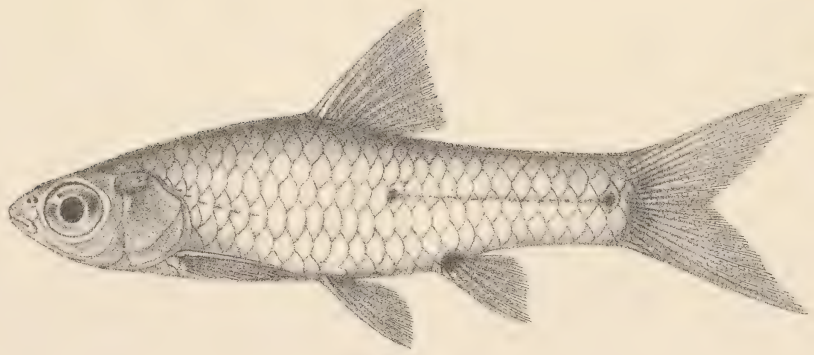

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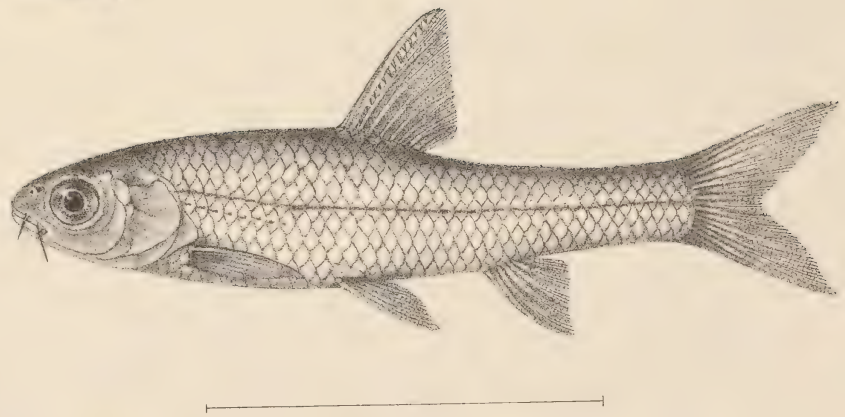

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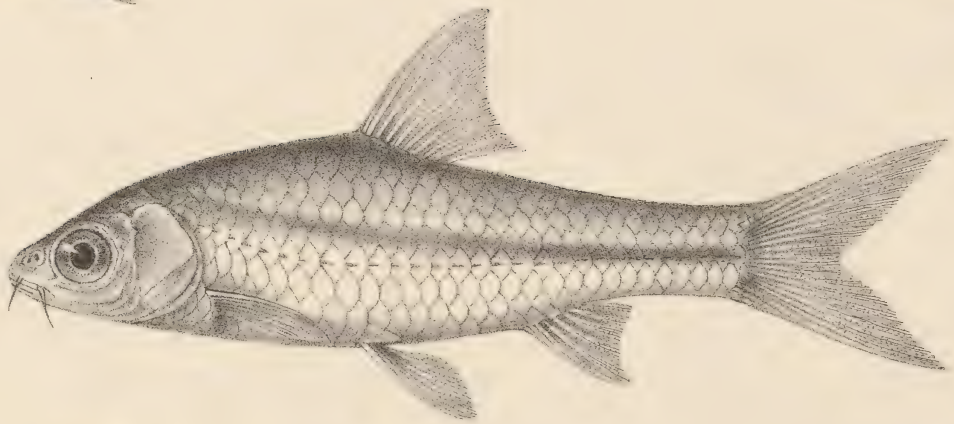

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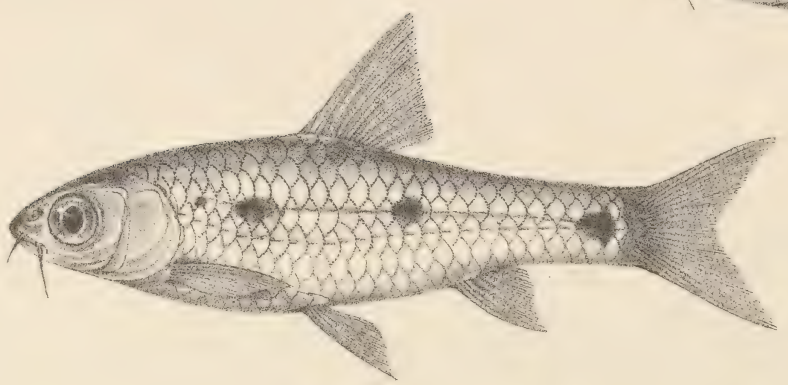

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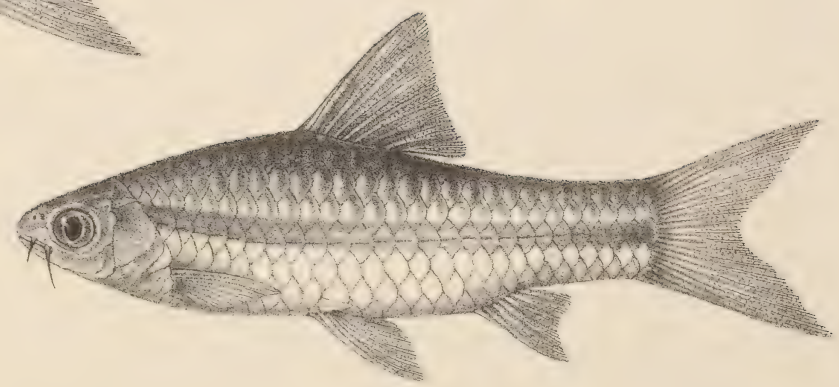


5.

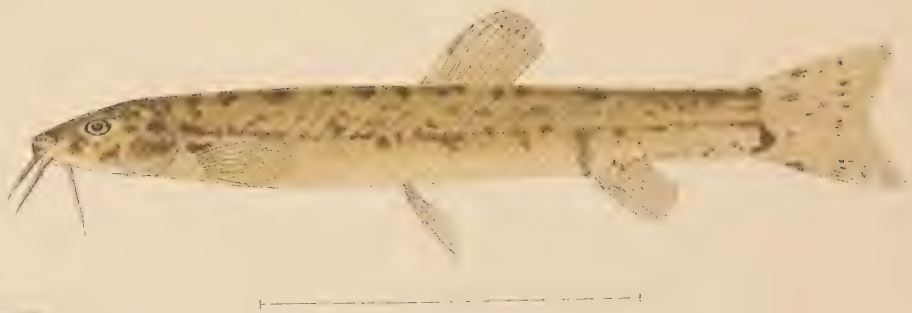
J. Green del. et lith.

J. Green imp.

1. BARBUS PLEUROGRAMMA. 2. B. PERINCE. 3. B. TRISPILOPLEURA. 4. B. HUMILUS. 5. B. NEGLECTUS.
6. B. WERNERI. 7. B. ANEMA. 8. B. STIGMATOPYGUS.

5.

2.



6.

4.

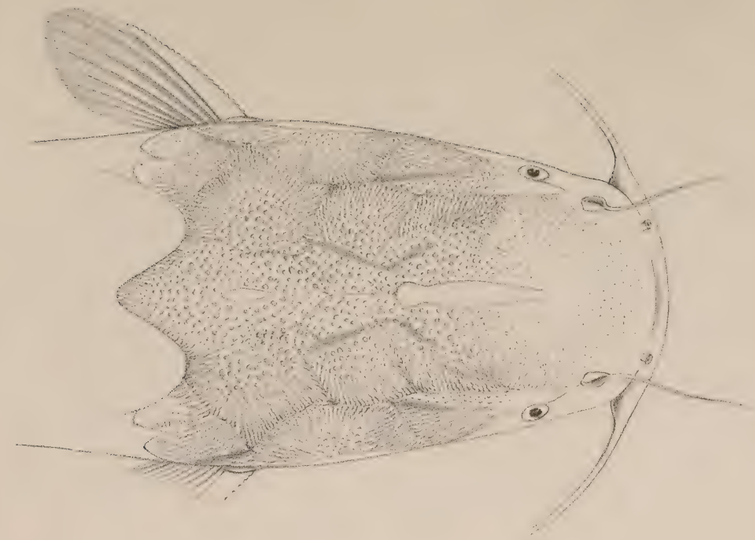
1.

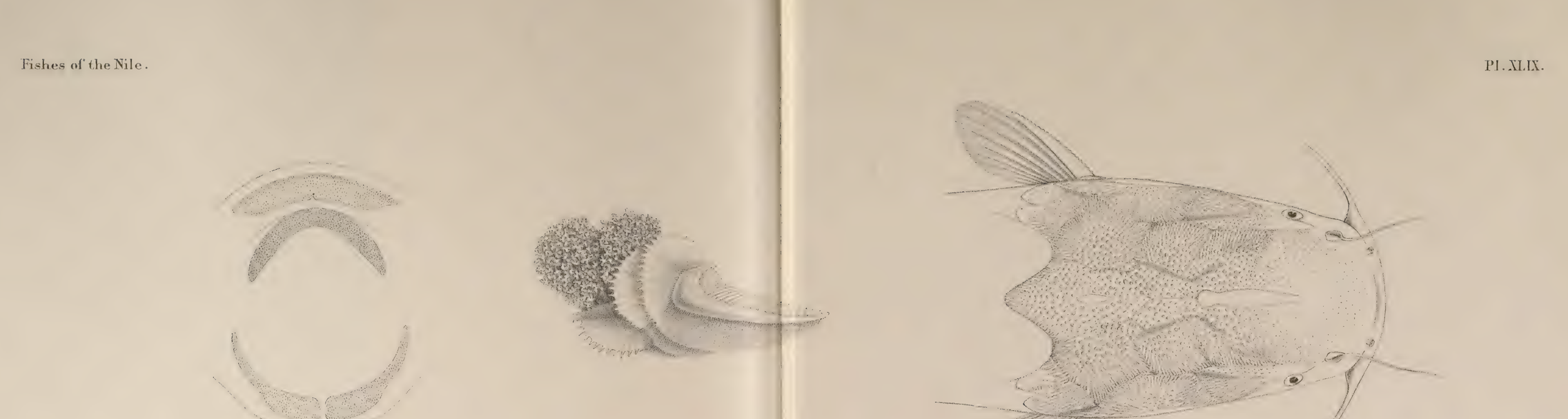
3.

J. Green del. et lith.

J. Green. Chromo.

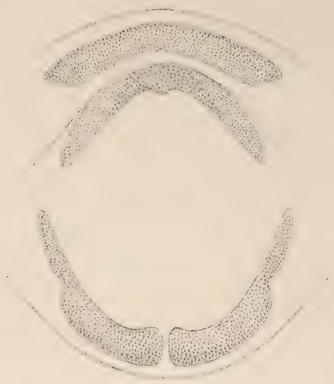
1. DISCOGNATHUS DEMBEENSIS. 2. BARBUS PUMILUS. 3. BARILIUS NILOTICUS. 4. B. LOATI.
5. CHELÆTHIOPS BIBIE. 6. NEMACHILUS ABYSSINICUS.

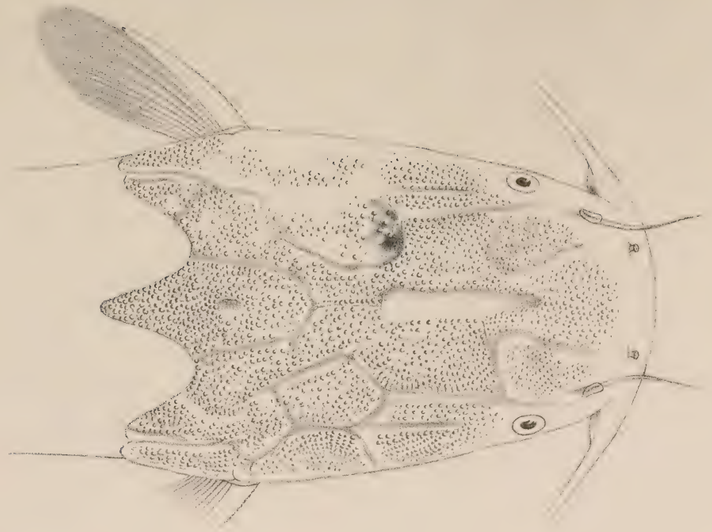


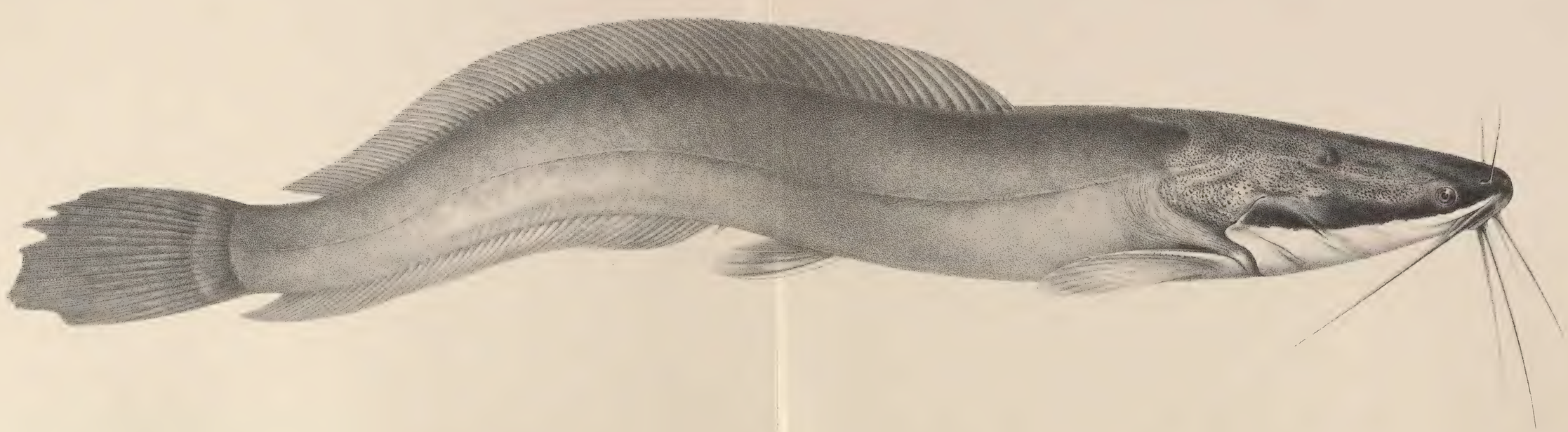


J. Green del. et lith.

CLARIAS ANGUILLARIS

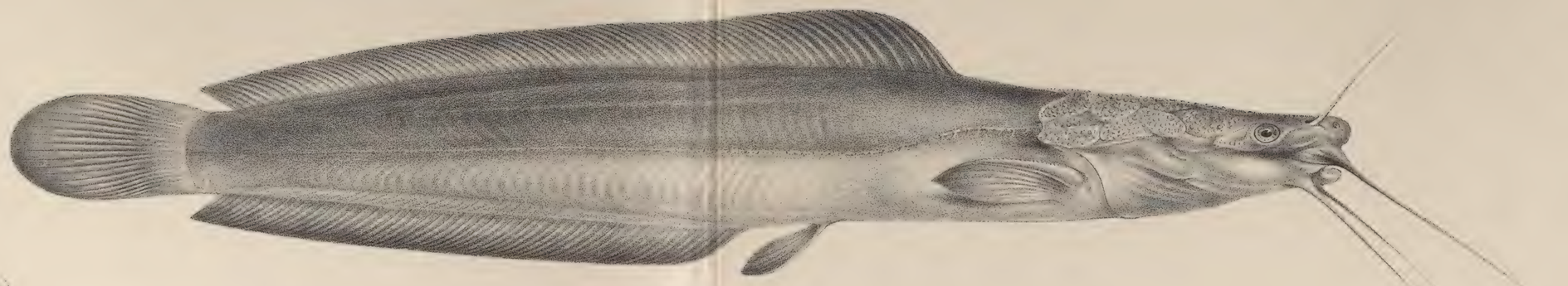






J. Green del. et lith.

CLARIAS MOORII.



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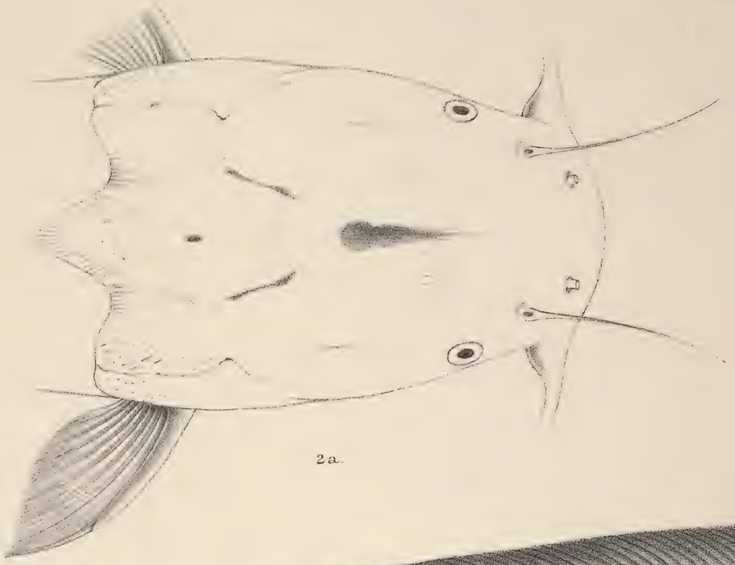
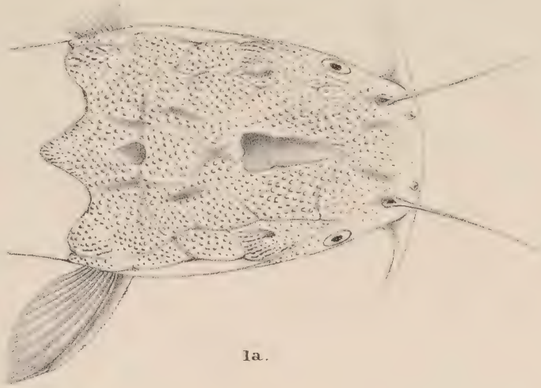


2a.

2b.

1b.



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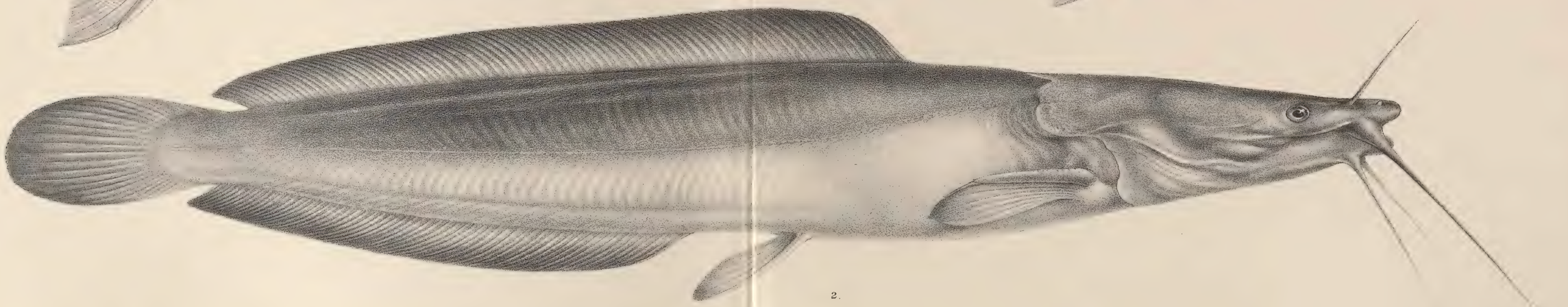
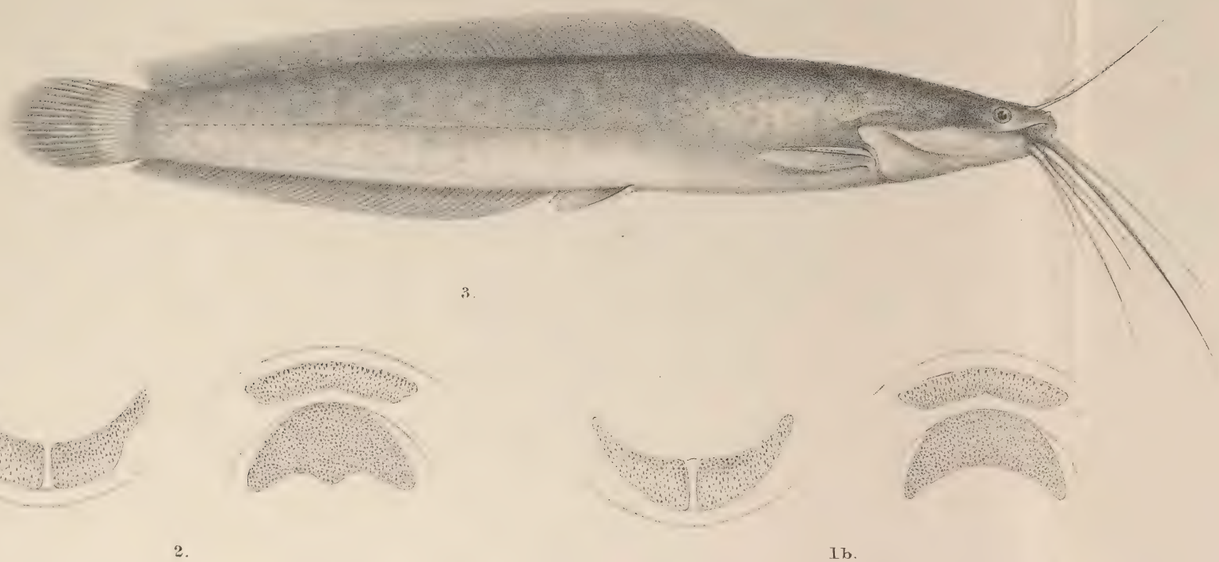


2.

J. Green del. et lith.

1. CLARIAS ROBECCHII. 2. C. TSANENSIS.



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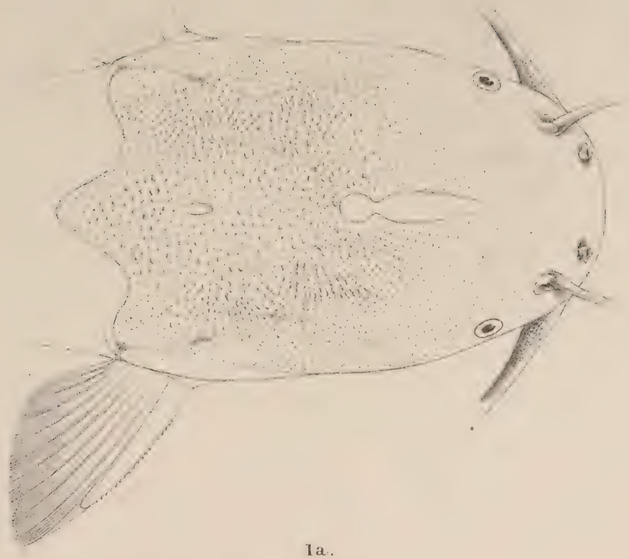
2.

1b.



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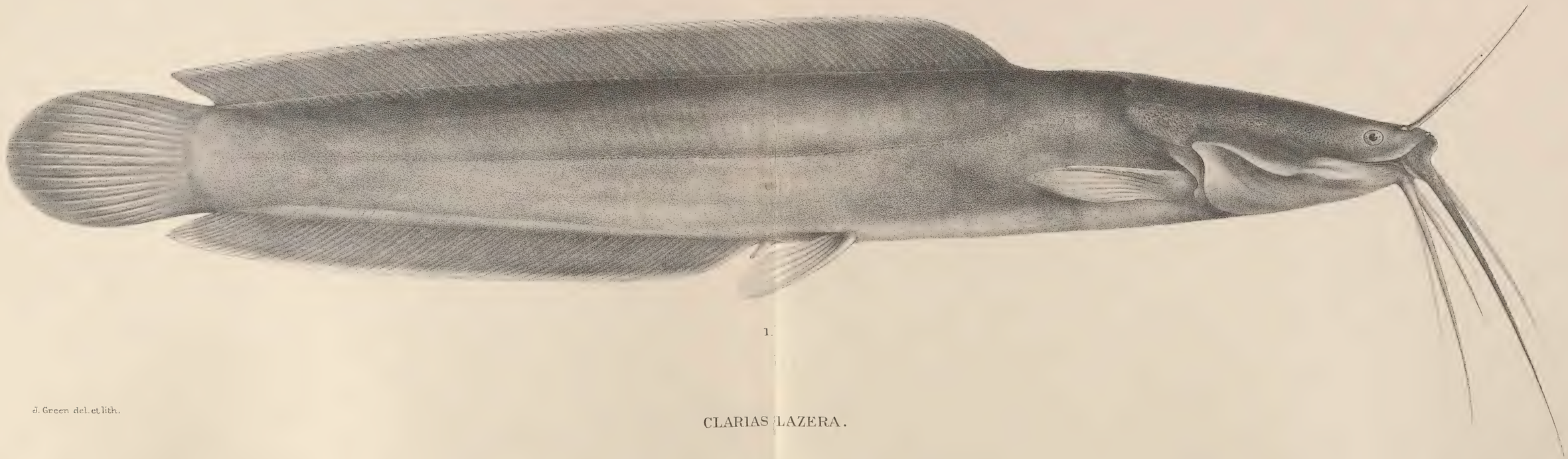
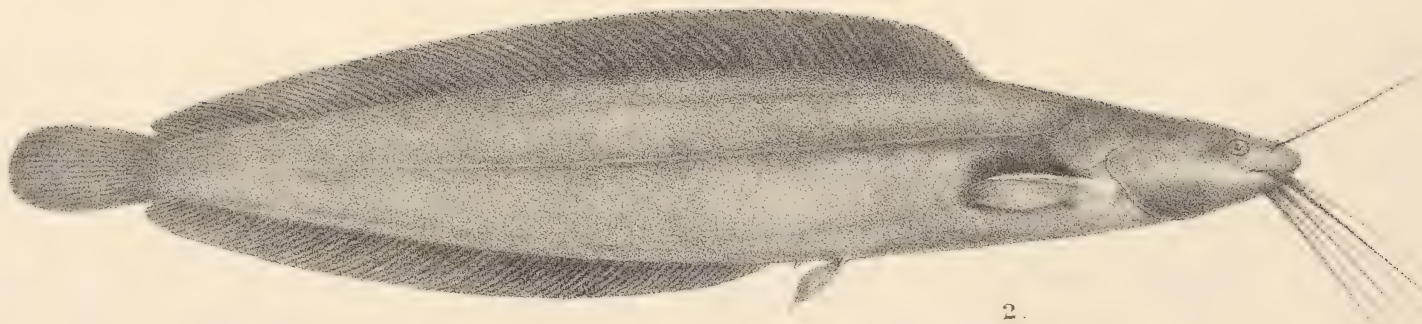


1.

d. Green del. et lith.

CLARIAS LAZERA.

2a.



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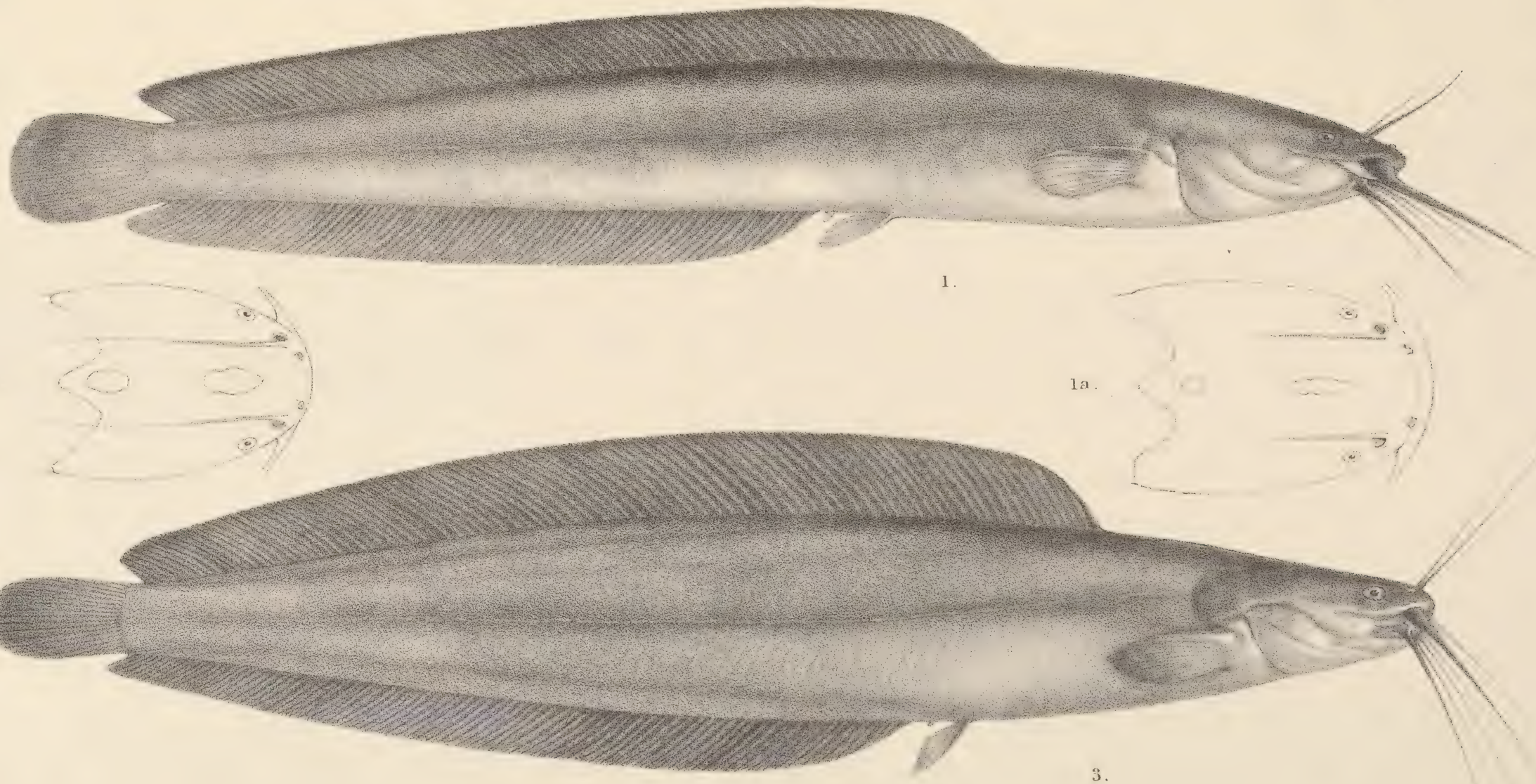


1.

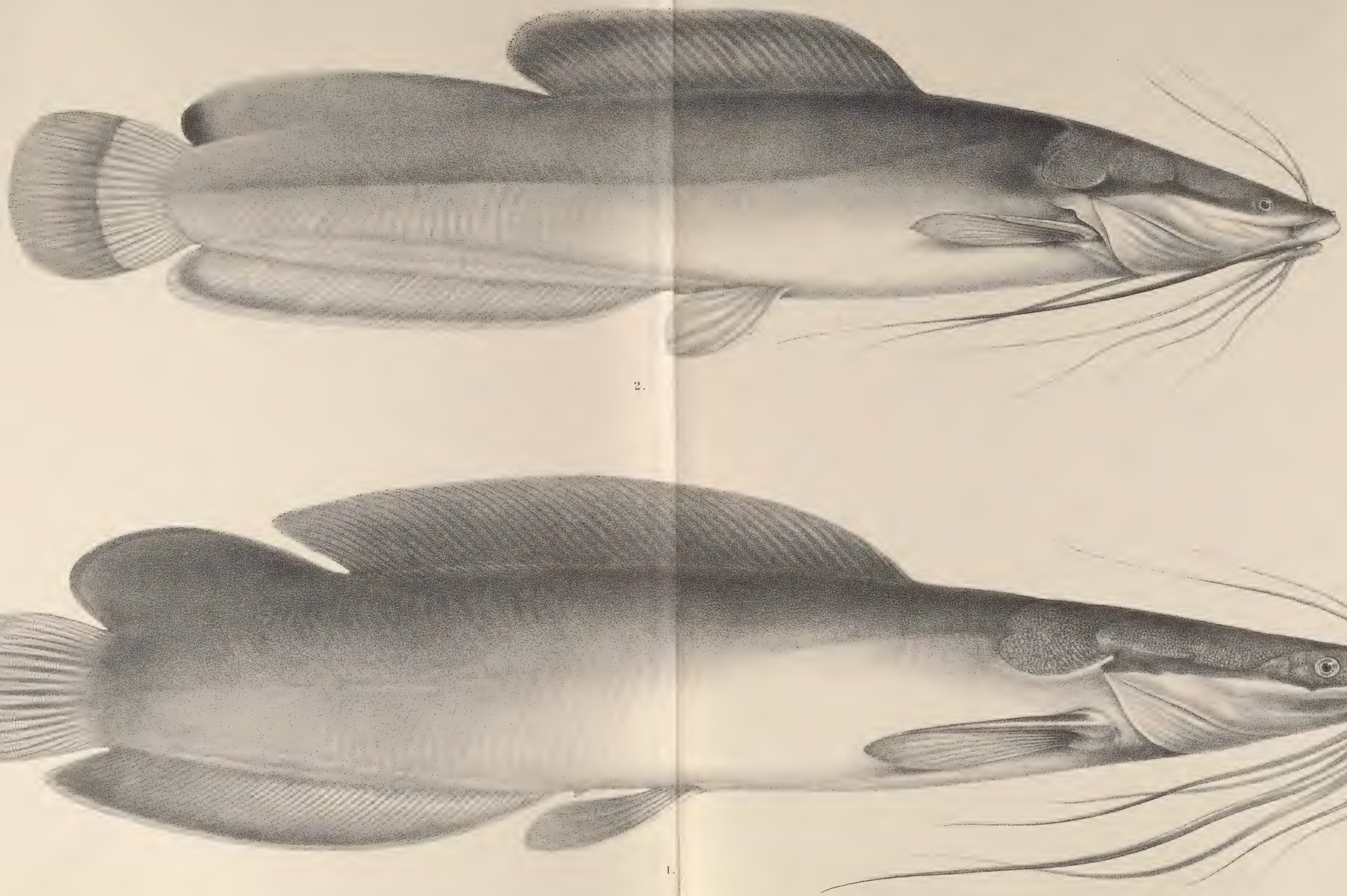
3a.

1a.

3.

J. Green del. et lith.

1. CLARIAS CARSONII. 2. C. ALLUAUDI. 3. C. WERNERI.



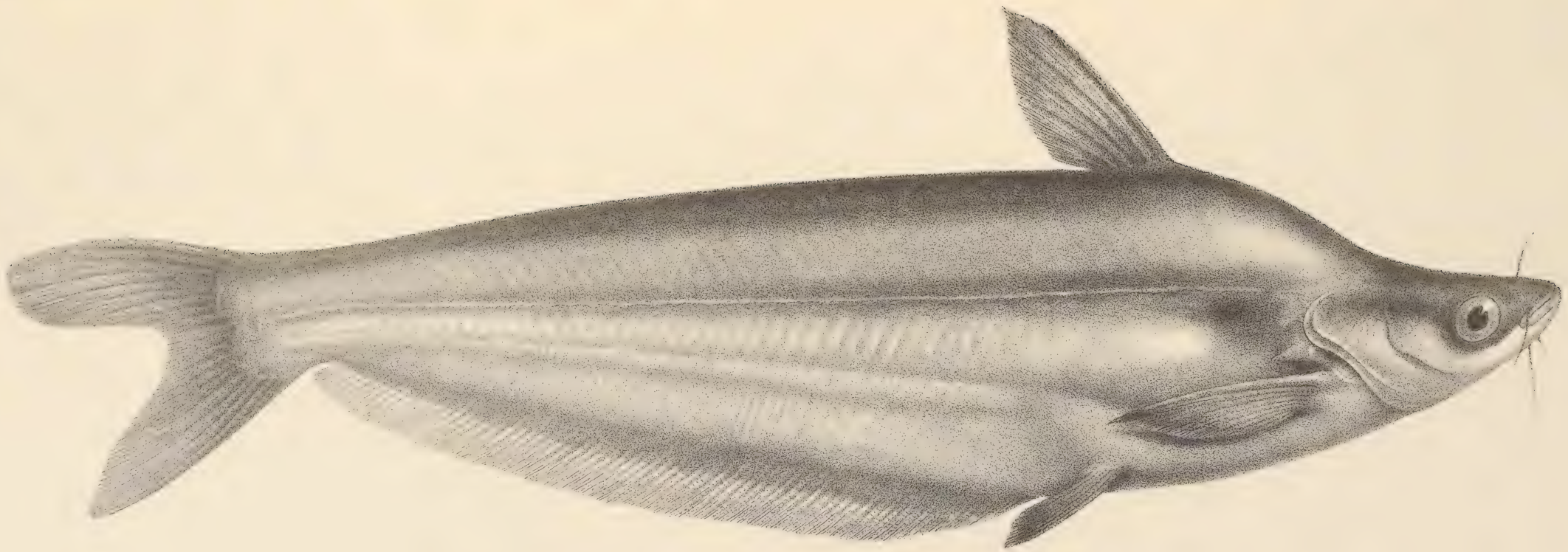
2.

1.

J. Green del. et lith.

1. HETEROBRANCHUS BIDORSALIS. 2. H. LONGIFILIS.

J. Green imp.



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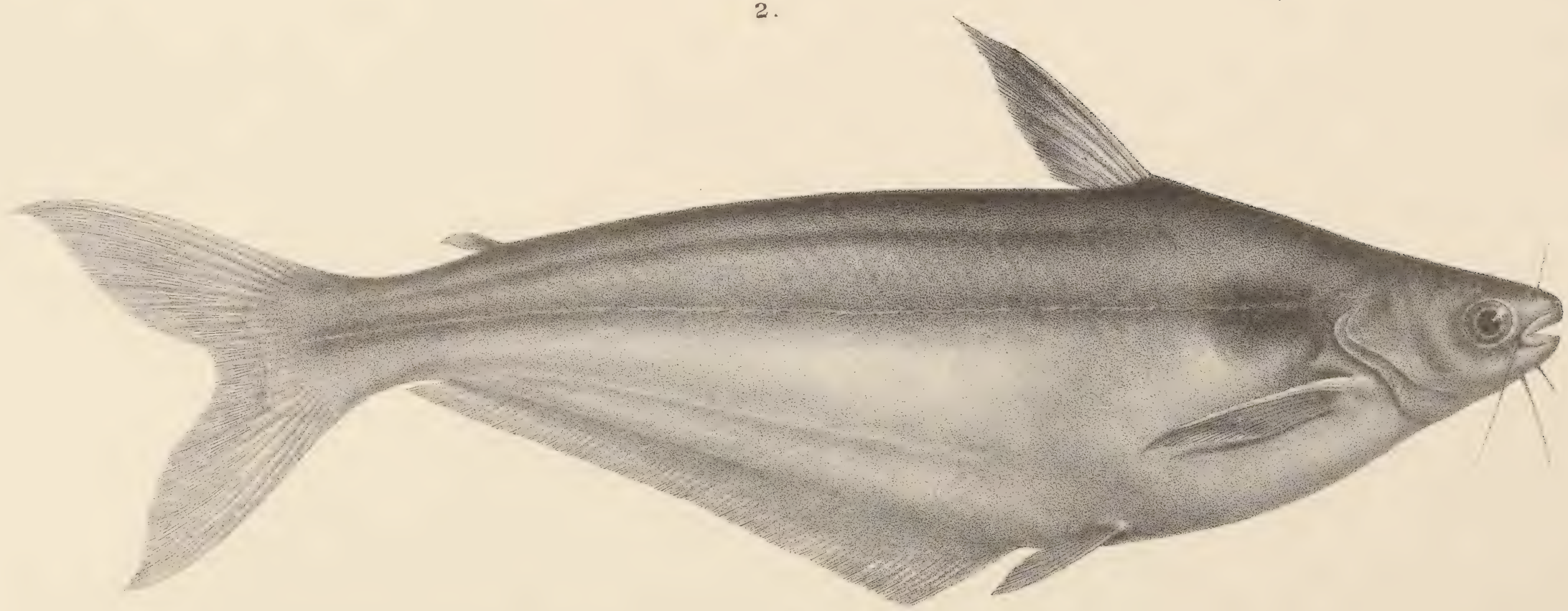
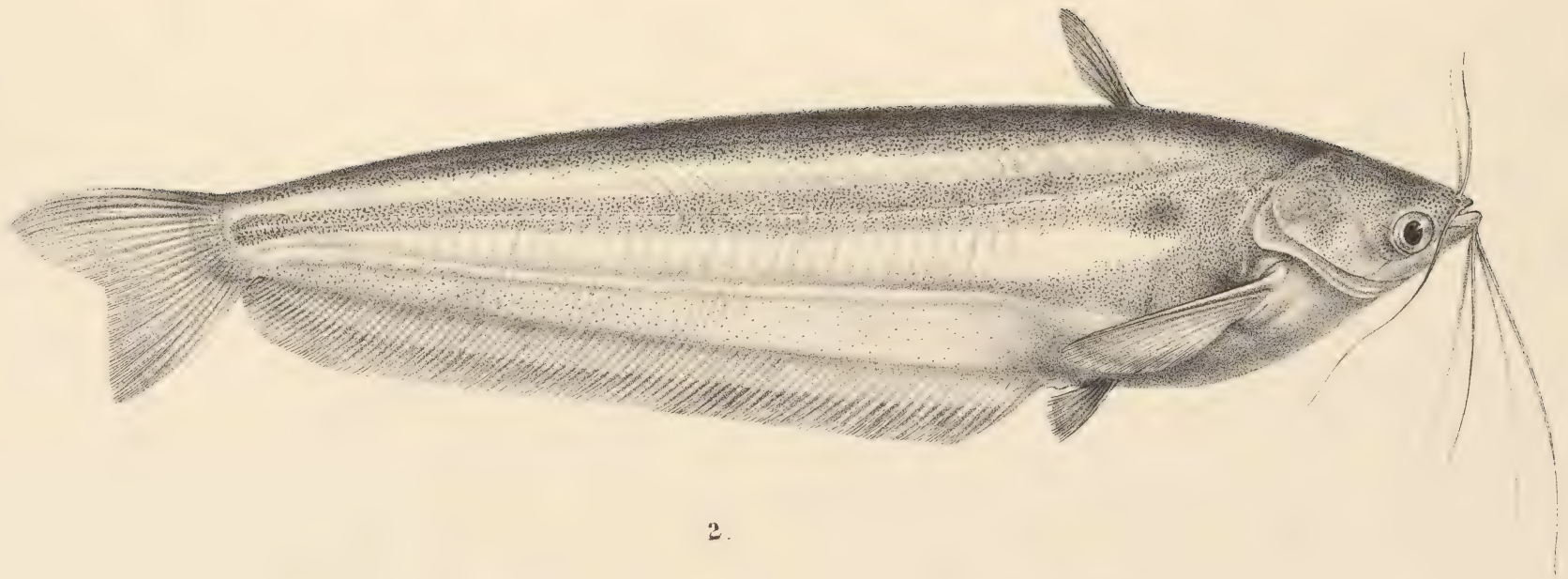


1.

J. Green del. et lith.

J. Green imp.

1. EUTROPIUS NILOTICUS 2. SCHILBE URANOSCOPUS.



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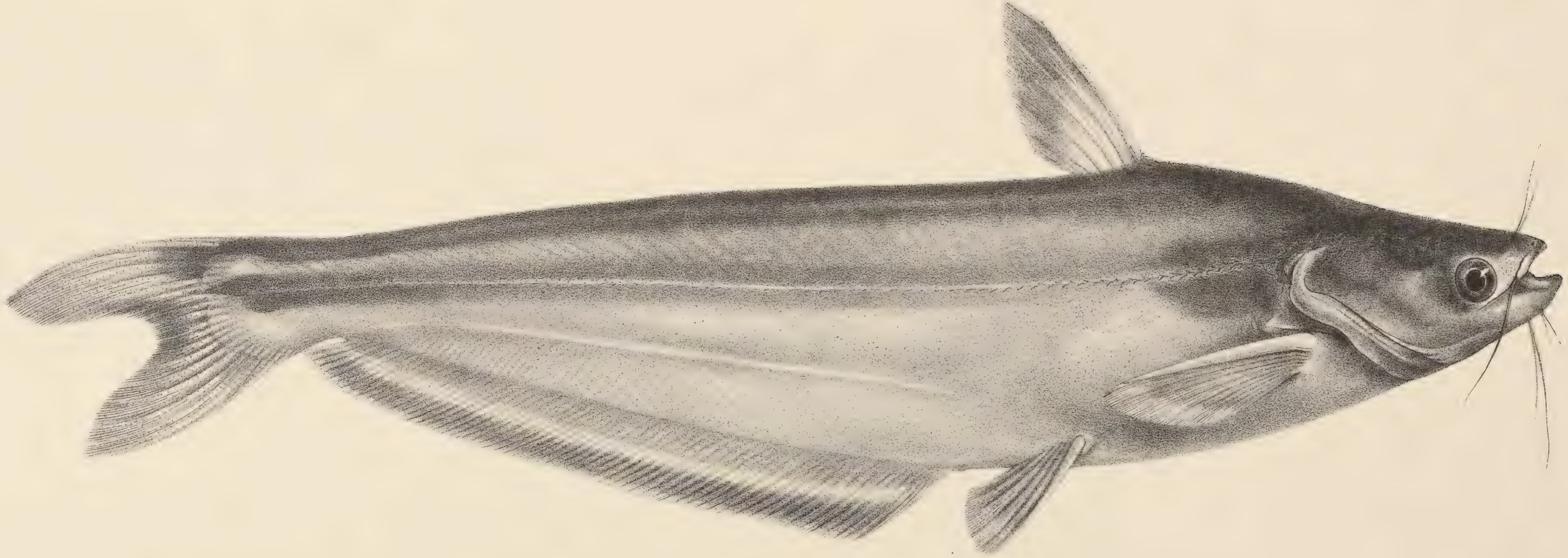


1.

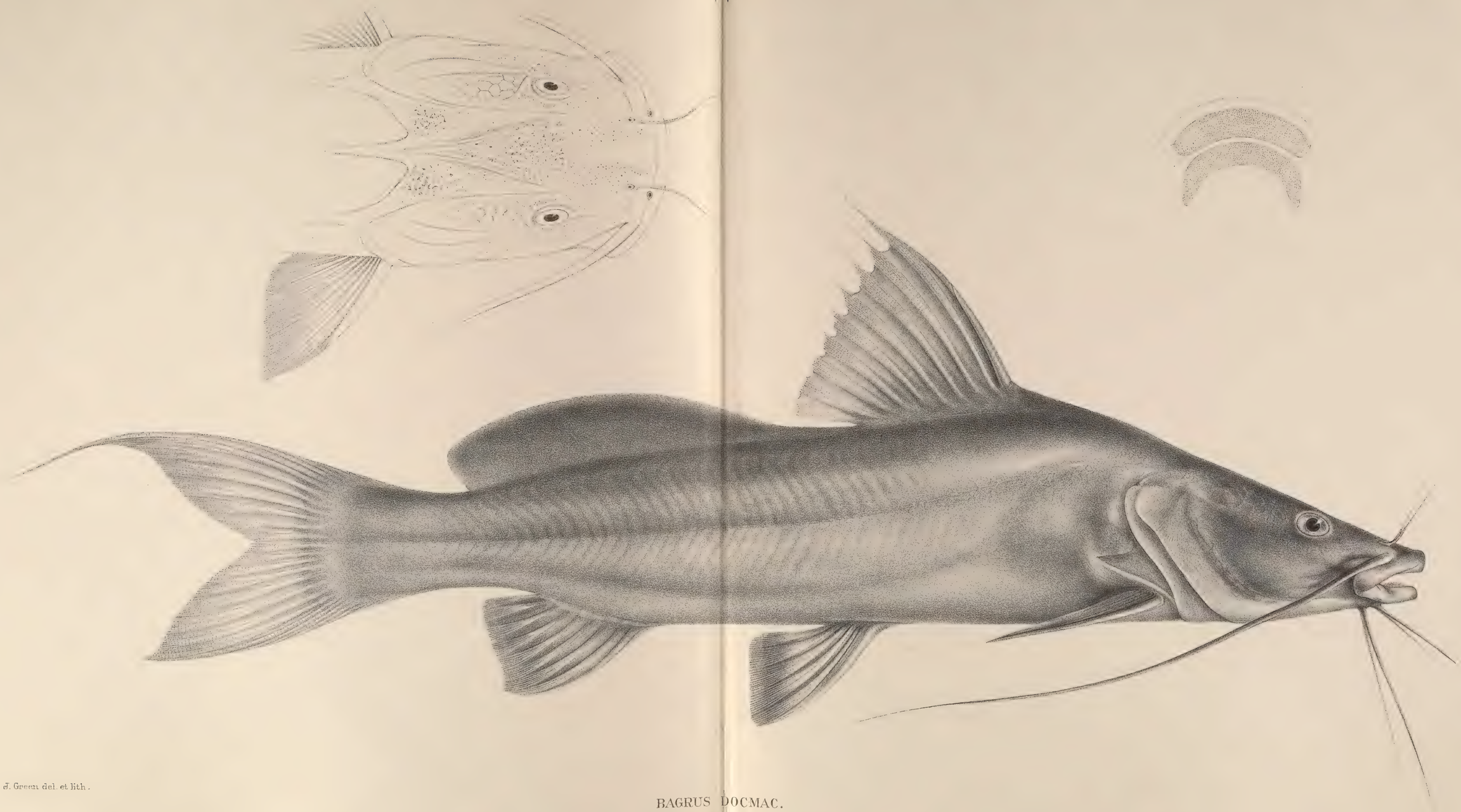
J. Green del. et lith.

J. Green imp.

1. SCHILBE MYSTUS. 2. SILURANODON AURITUS.

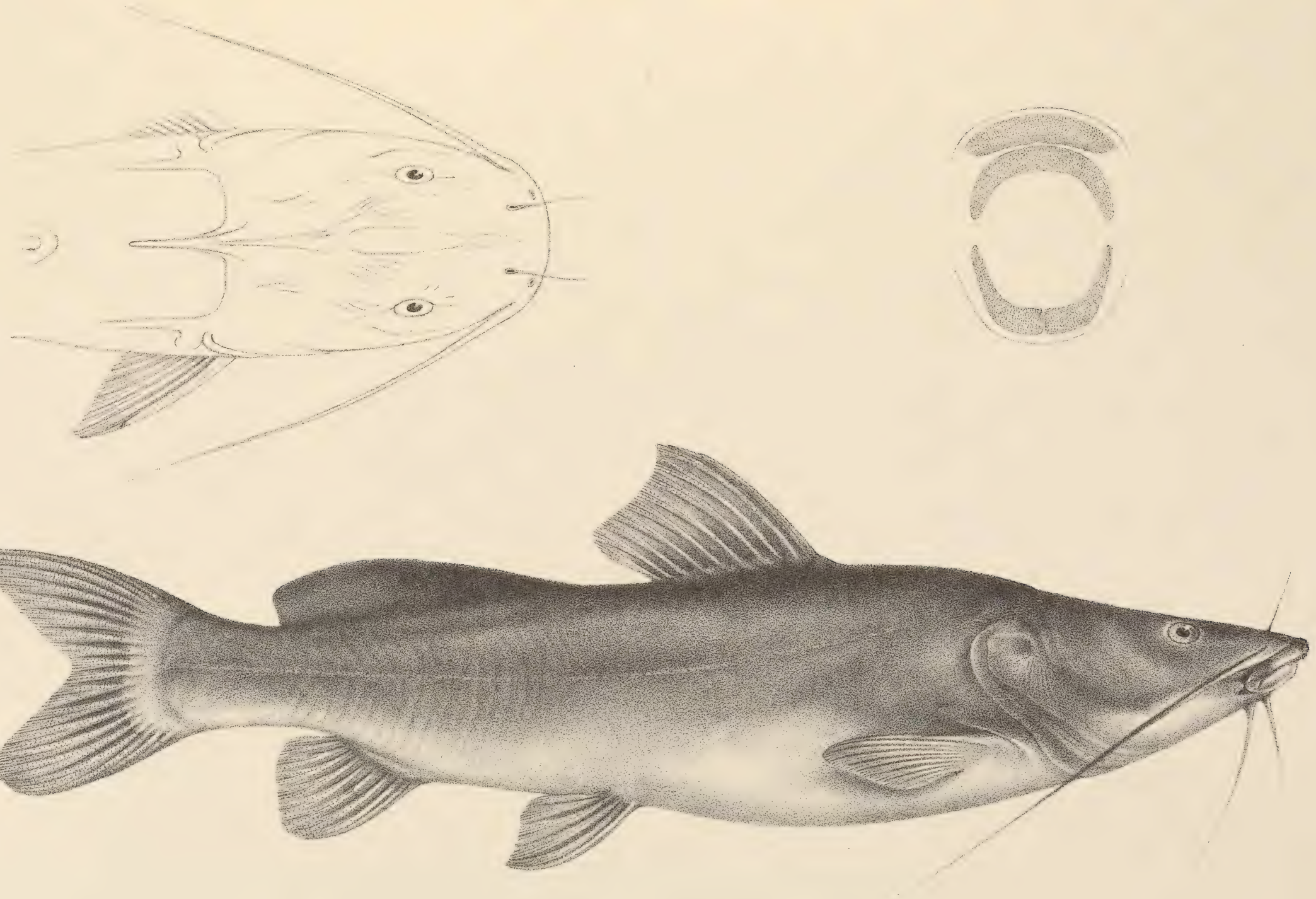
J. Green del. et lith.

BAGRUS BAYAD.



J. Green del. et lith.

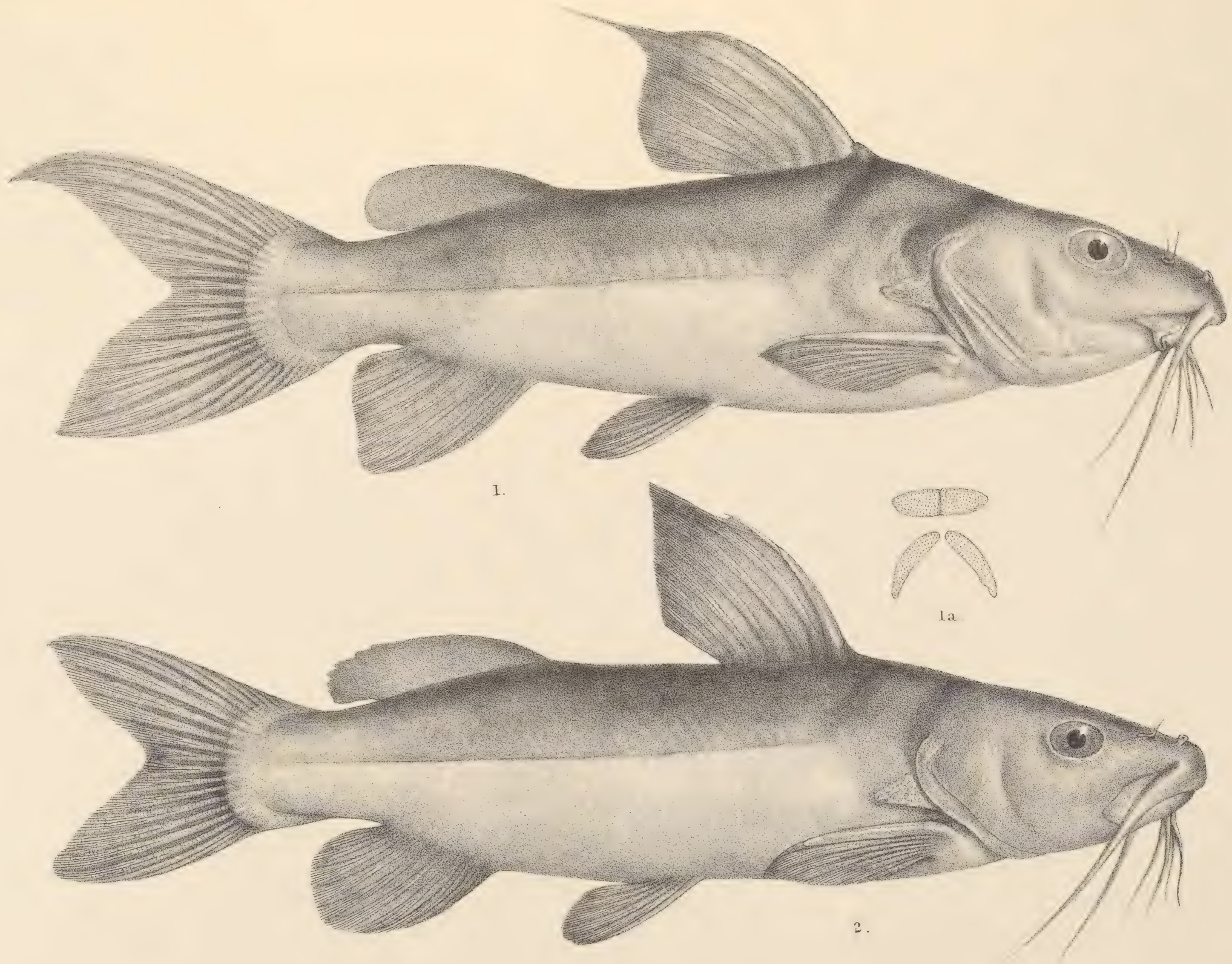
BAGRUS DOCMAC.



J. Green del. et lith.

BAGRUS DEGENI.

J. Green imp.



1.

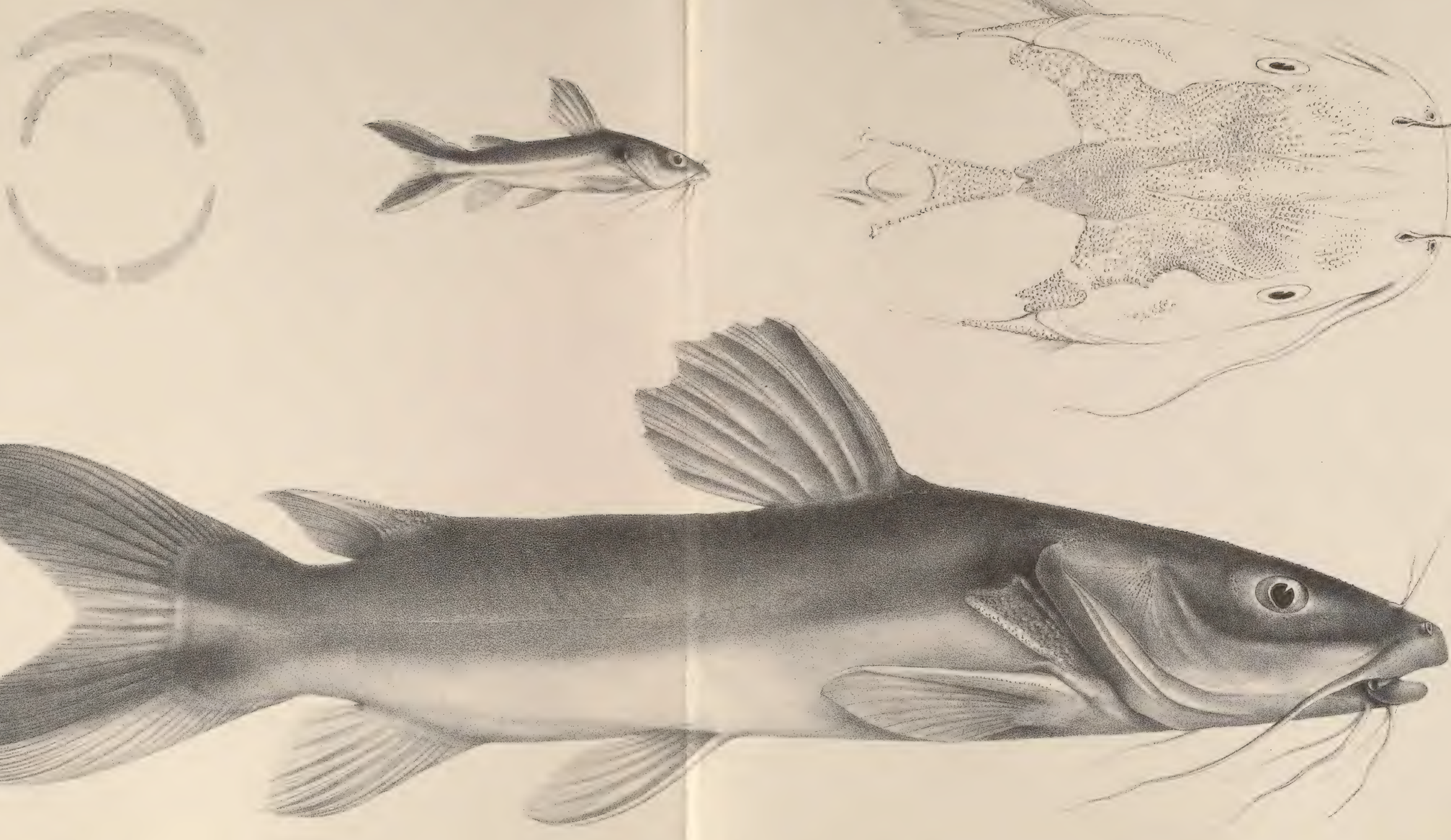
1a.

2.

J Green del. et lith.

J. Green imp.

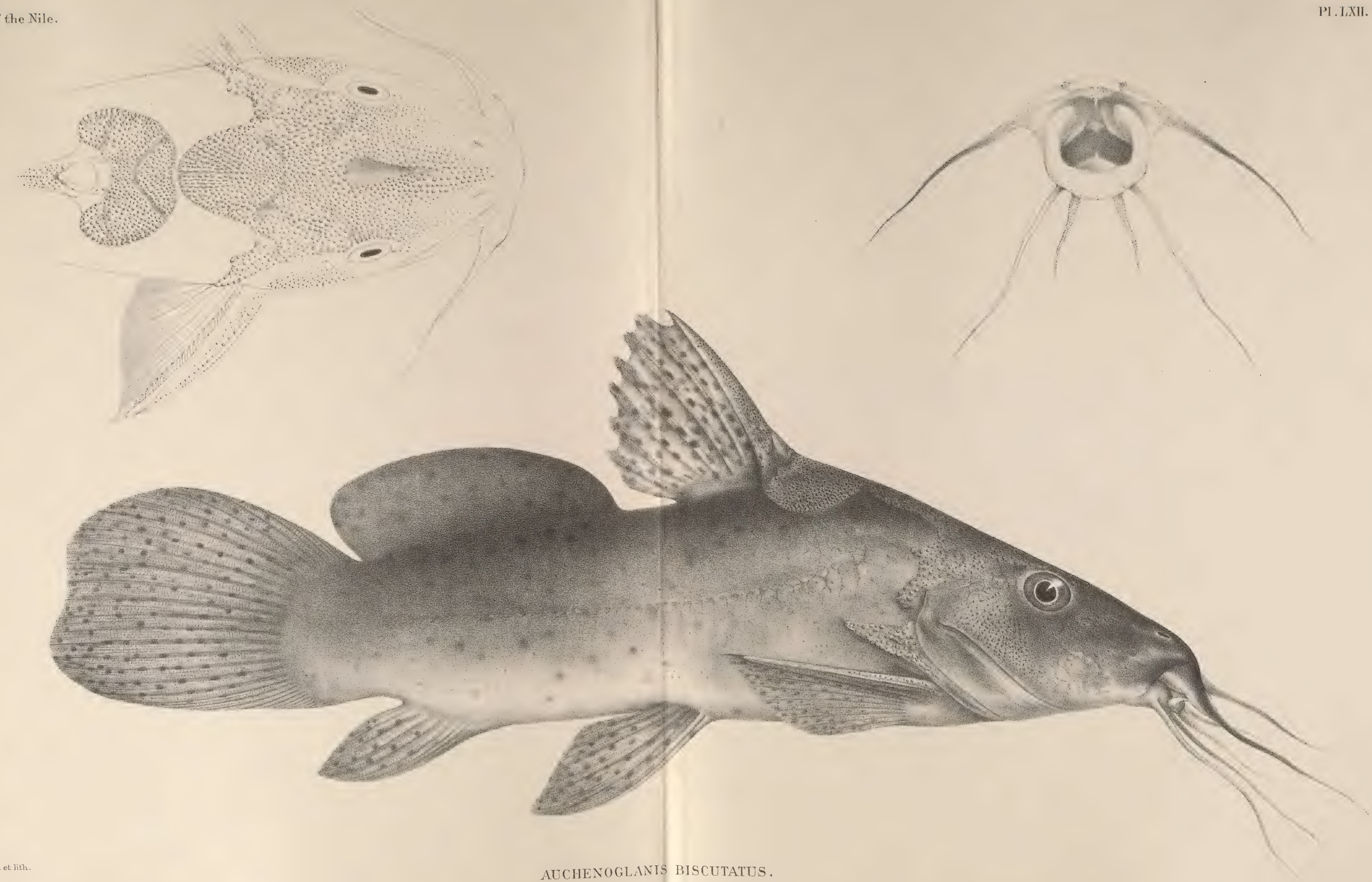
1. CHRYSICHTHYS AURATUS. 2. C. RUEPPELLI.



J. Green del. et lith.

CLAROTES LATICEPS.

J. Green imp.



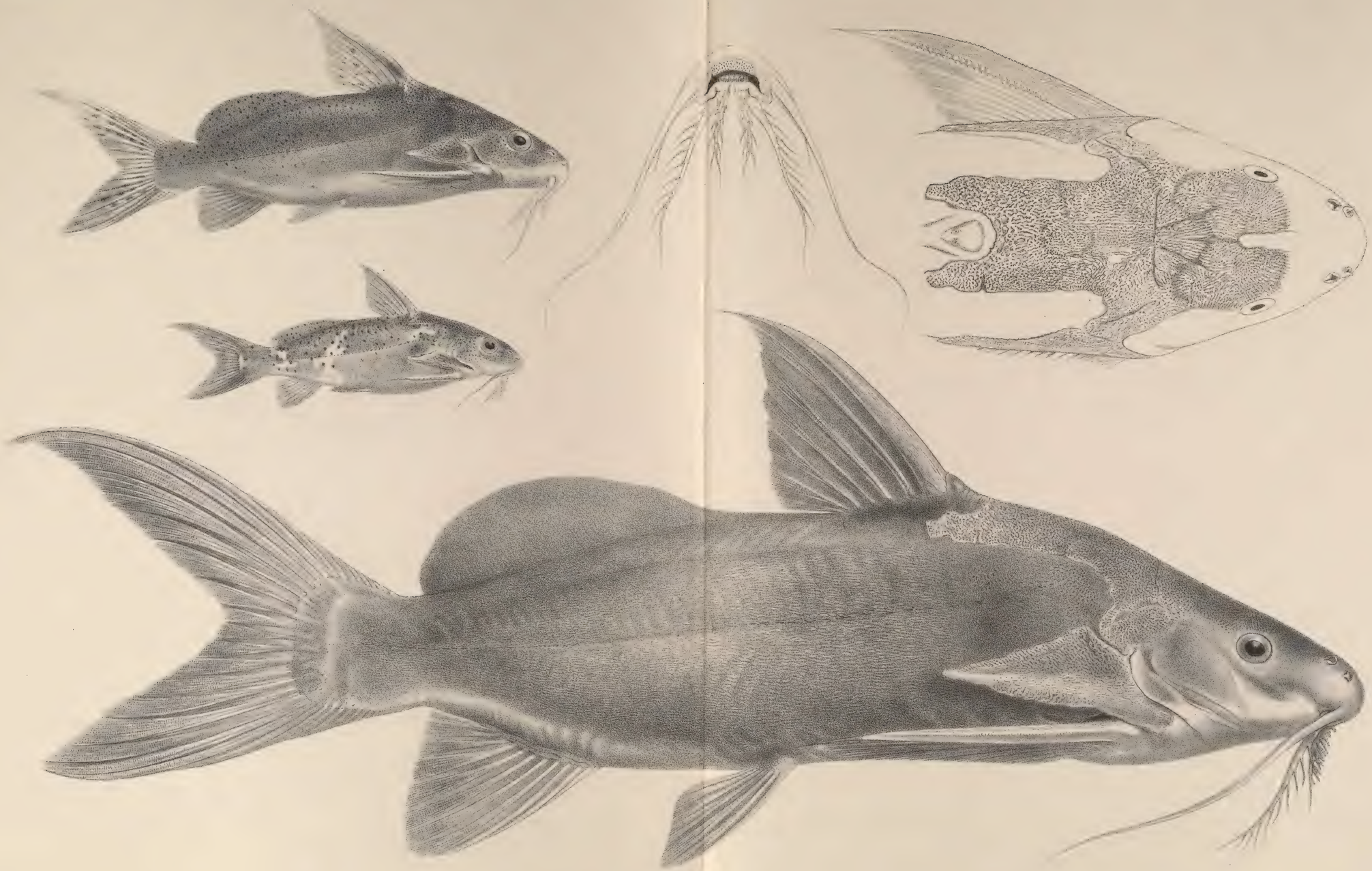
J. Green. del. et lith.

AUCHENOGLANIS BISCUTATUS.

J. Green del. et lith.

AUCHENOGLANIS OCCIDENTALIS.

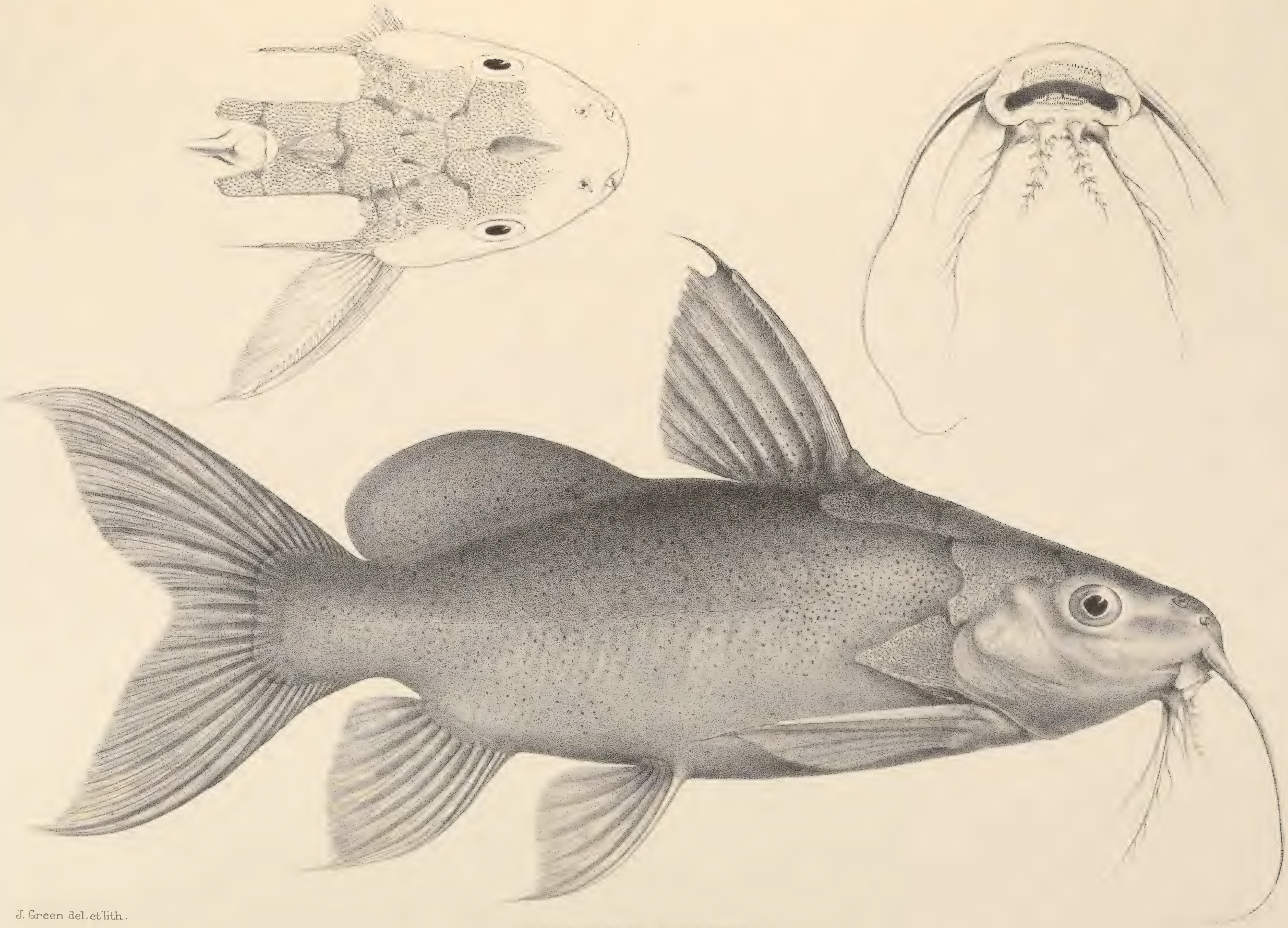
J. Green imp.



P. Smit. del. et lith.

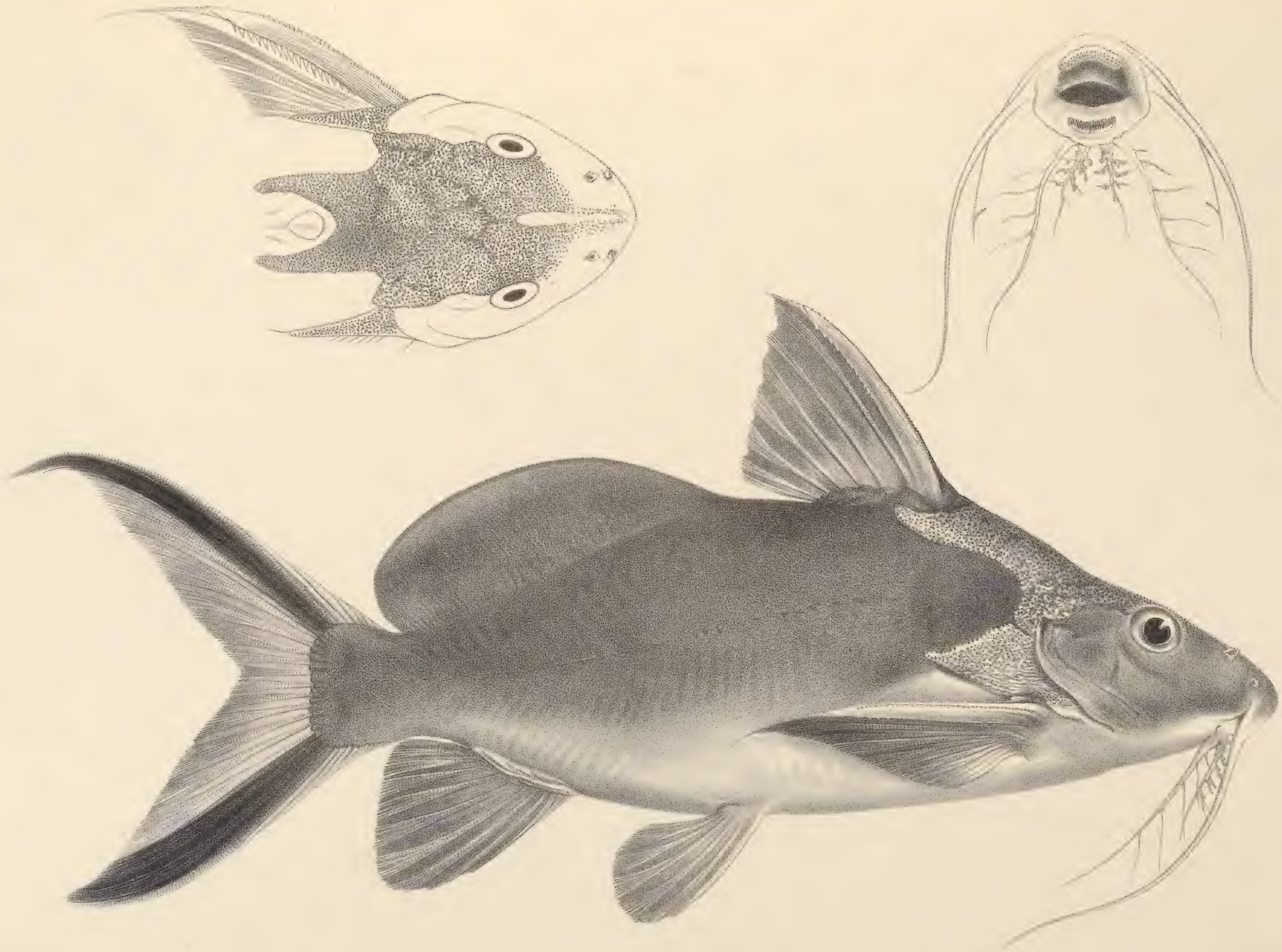
SYNODONTIS SCHALL.

J. Green imp.



J. Green del. et lith.

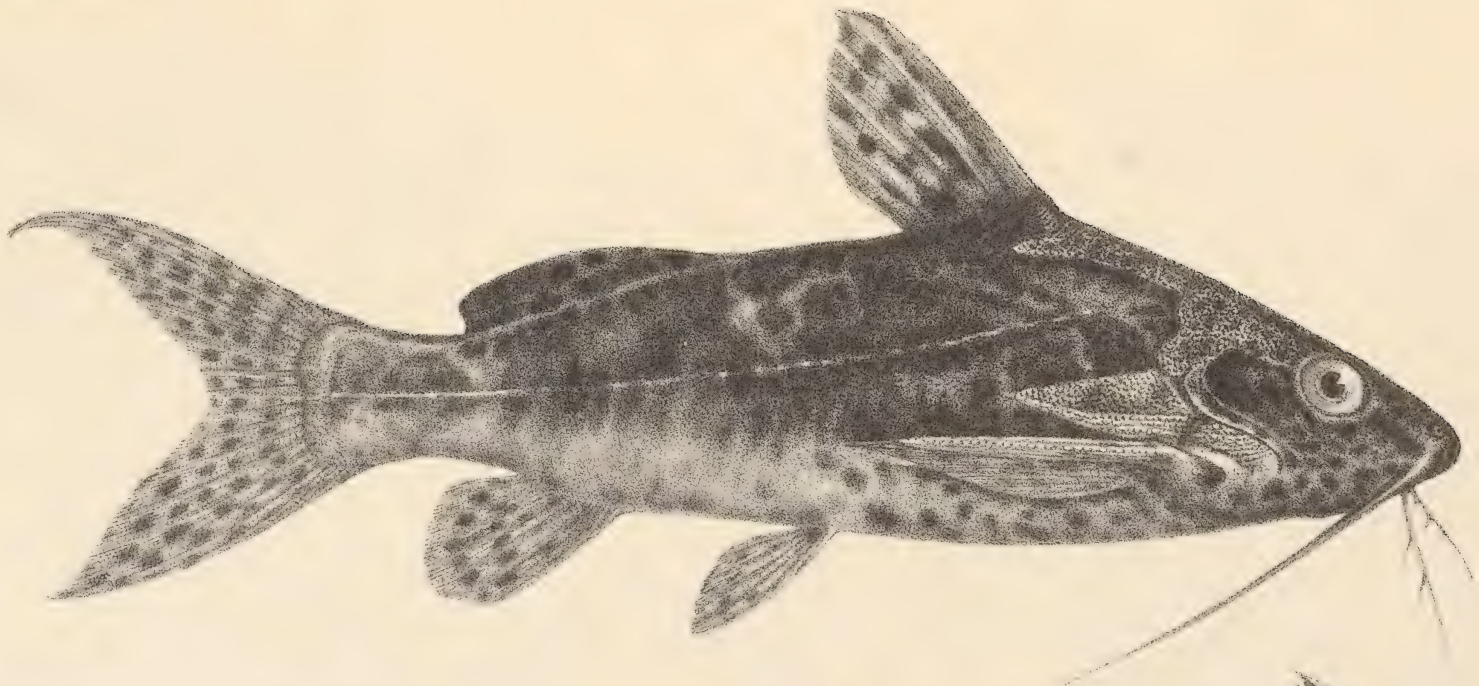
SYNODONTIS FRONTOSUS.



P. Smit del. et lith.

J. Green imp

SYNODONTIS CAUDOVITTATUS.



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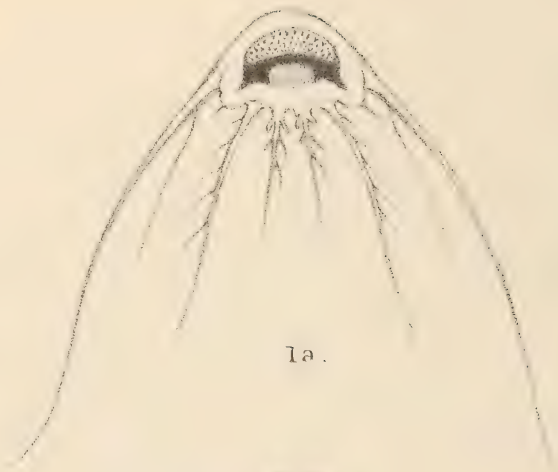

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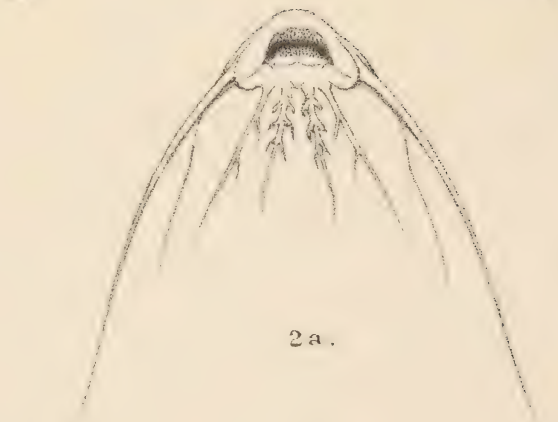

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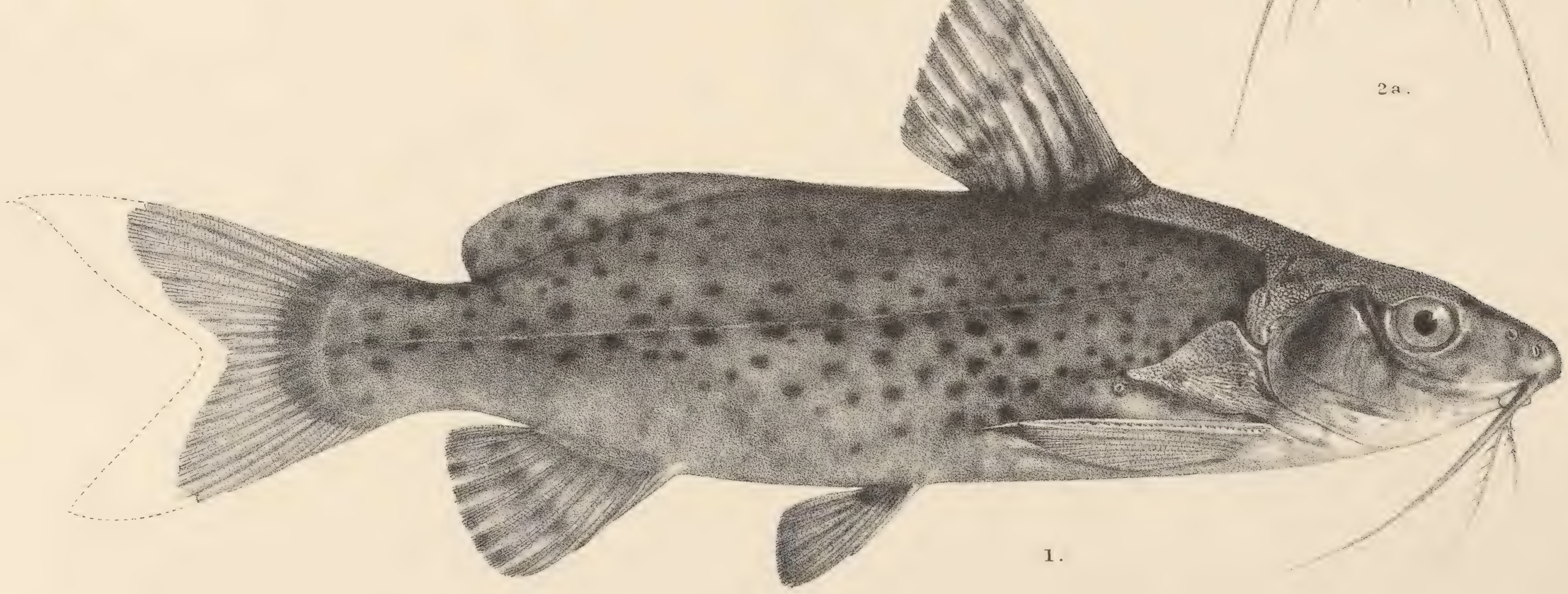
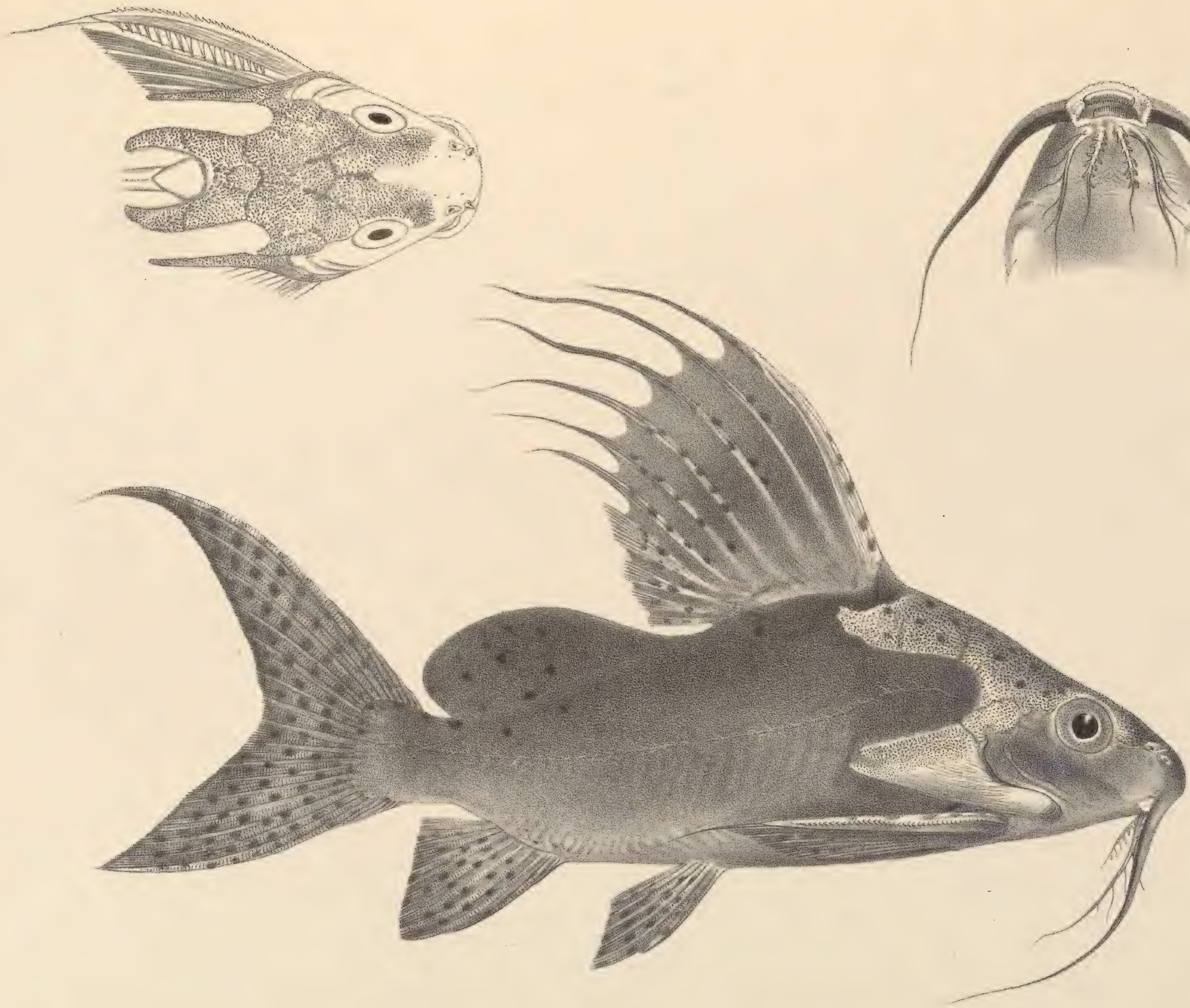


1.

J. Green del. et lith.

J. Green. imp.

1. SYNODONTIS VICTORIÆ. 2. S. AFRO-FISCHERI.



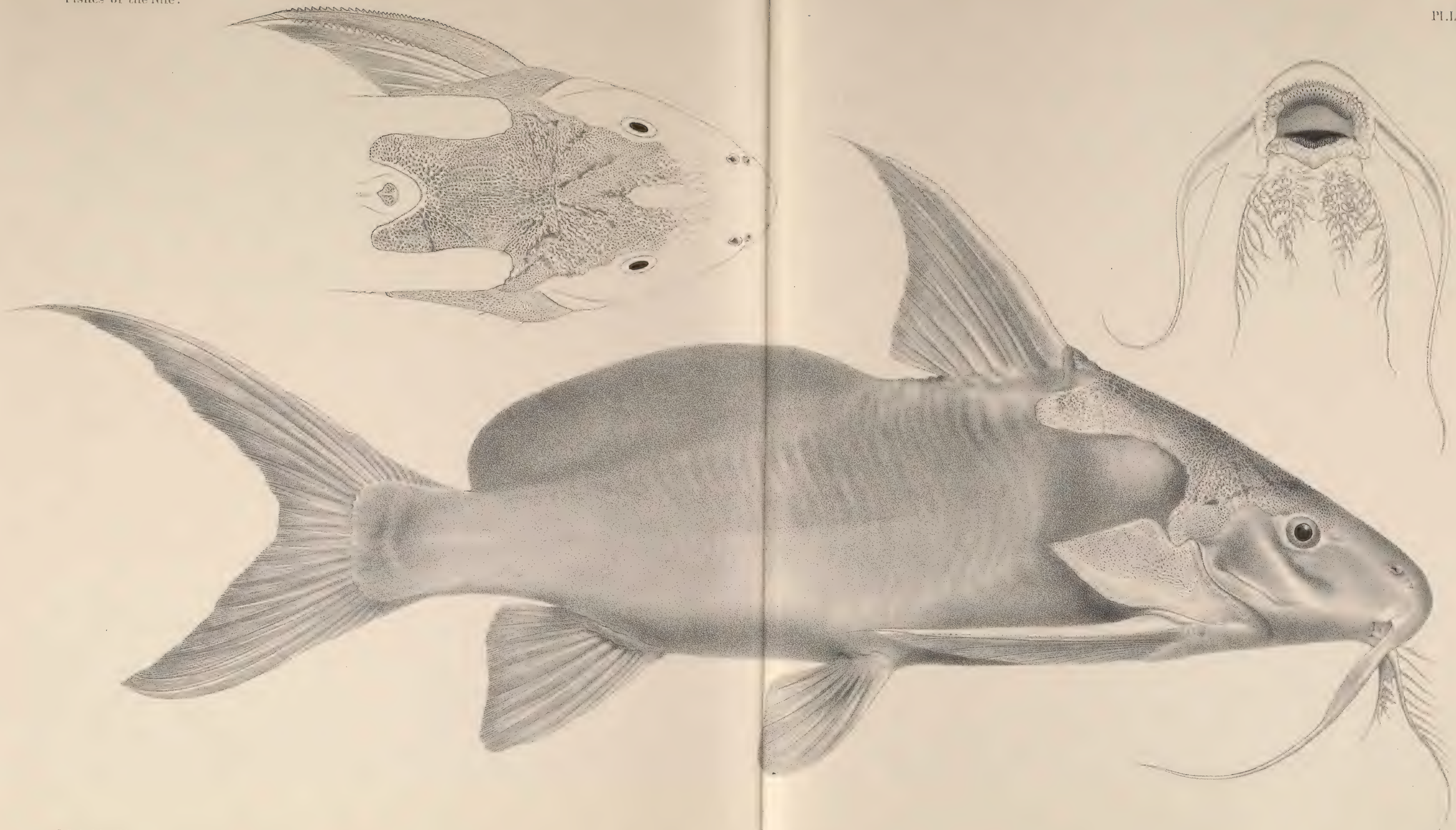
P. Smit del. et lith. J. Green imp.

SYNODONTIS EUPTERUS.

J. Green del. et lith.

SYNODONTIS FILAMENTOSUS.

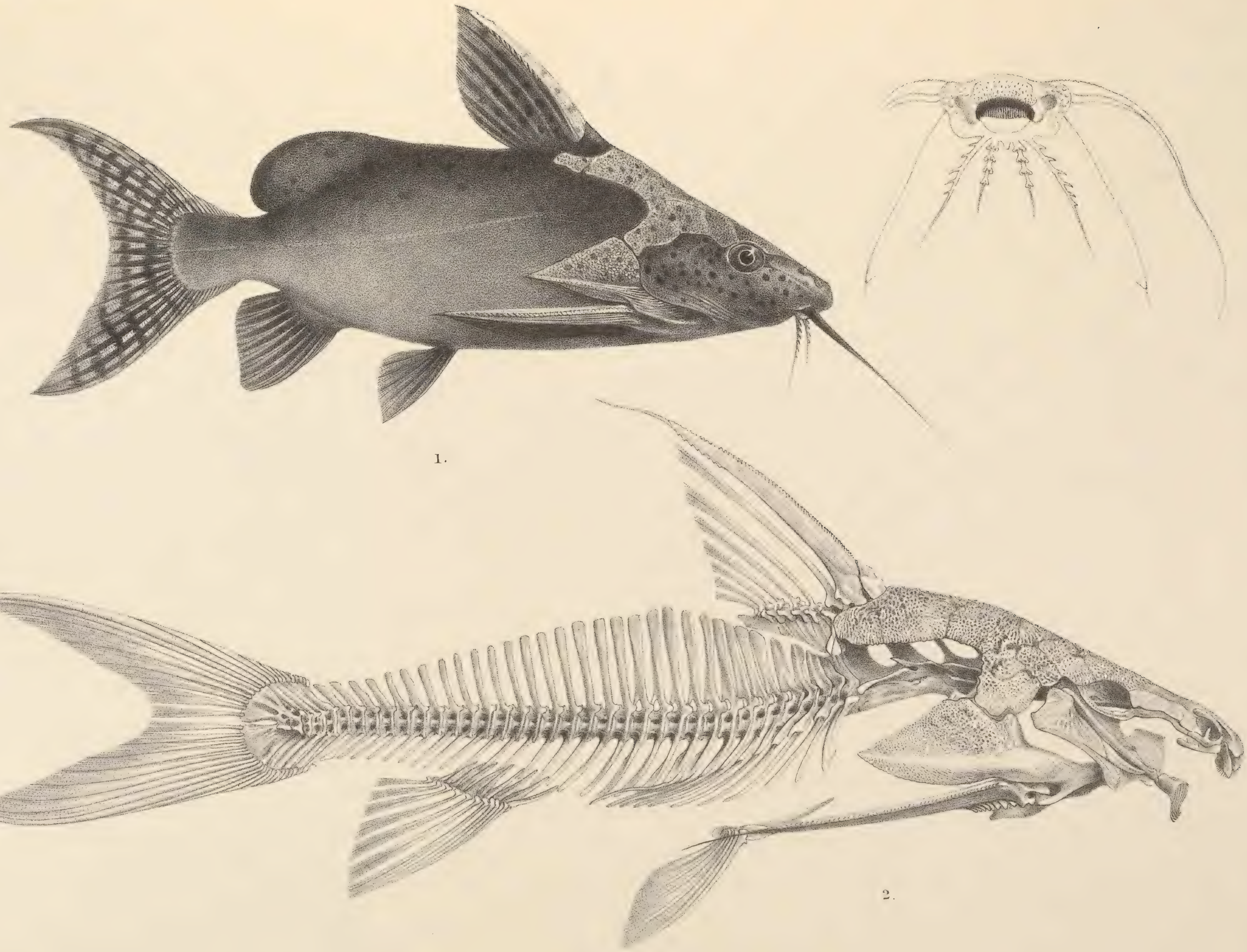
J. Green imp.



P. Smit del. et lith.

SYNODONTIS SERRATUS.

J. Green imp.



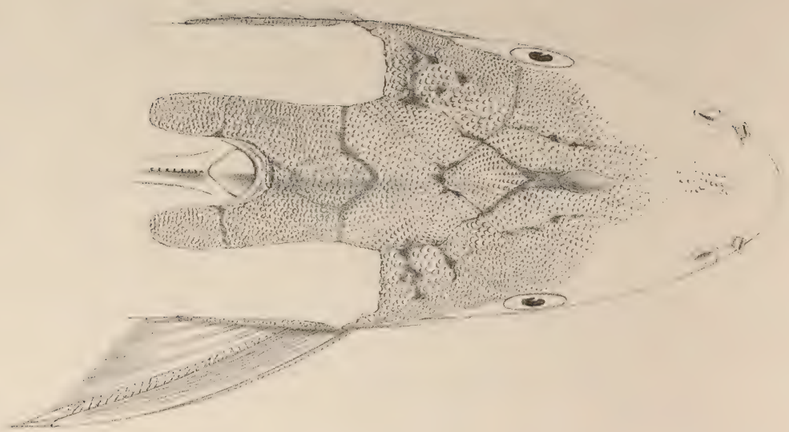
1.

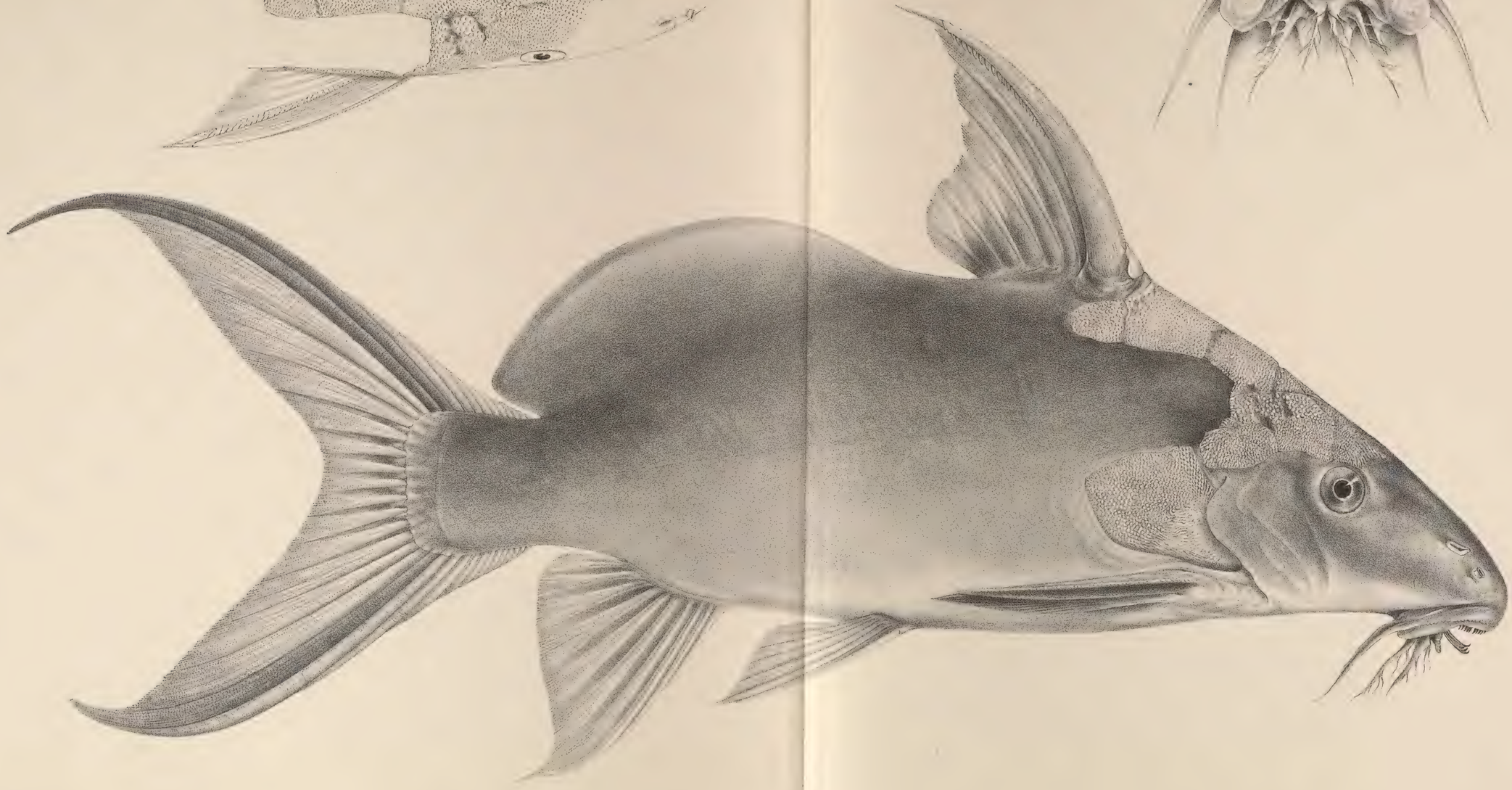
2.

J. Green del. et lith.

J. Green imp.

1. SYNODONTIS NIGRITA. 2. S. SERRATUS.

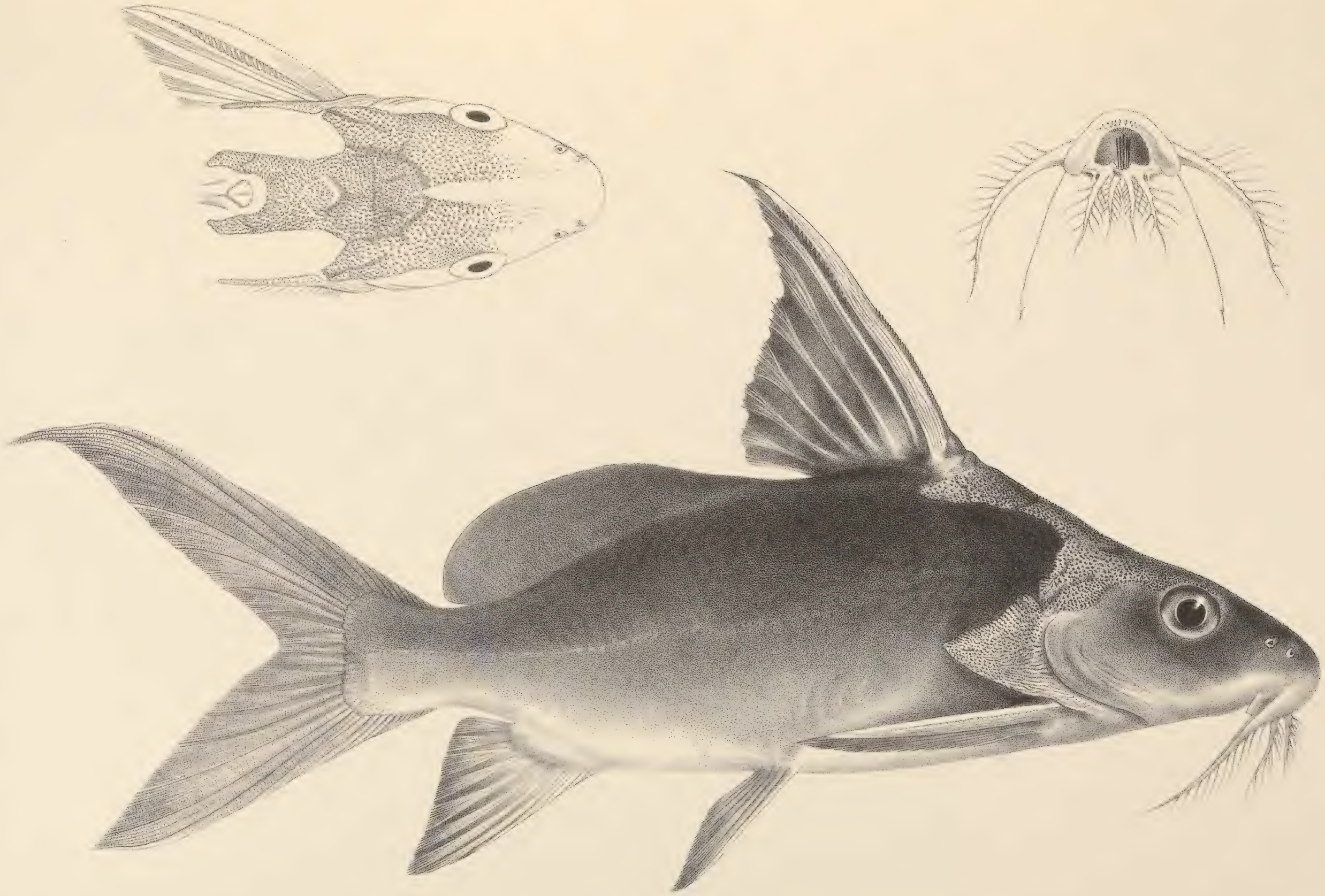




J. Green del. et lith.

SYNODONTIS SOREX.

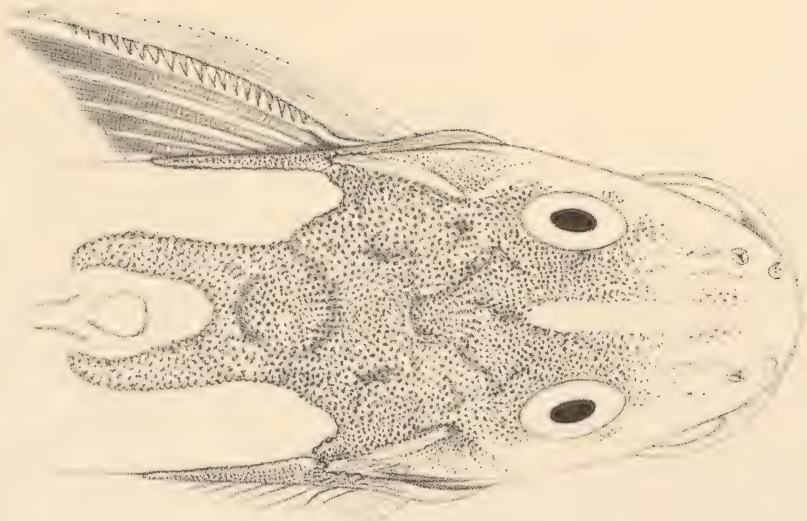
J. Green imp.

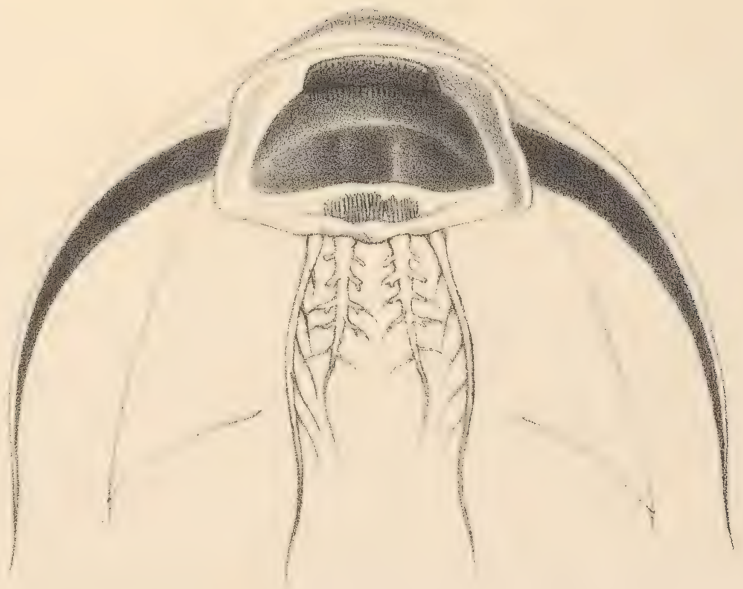


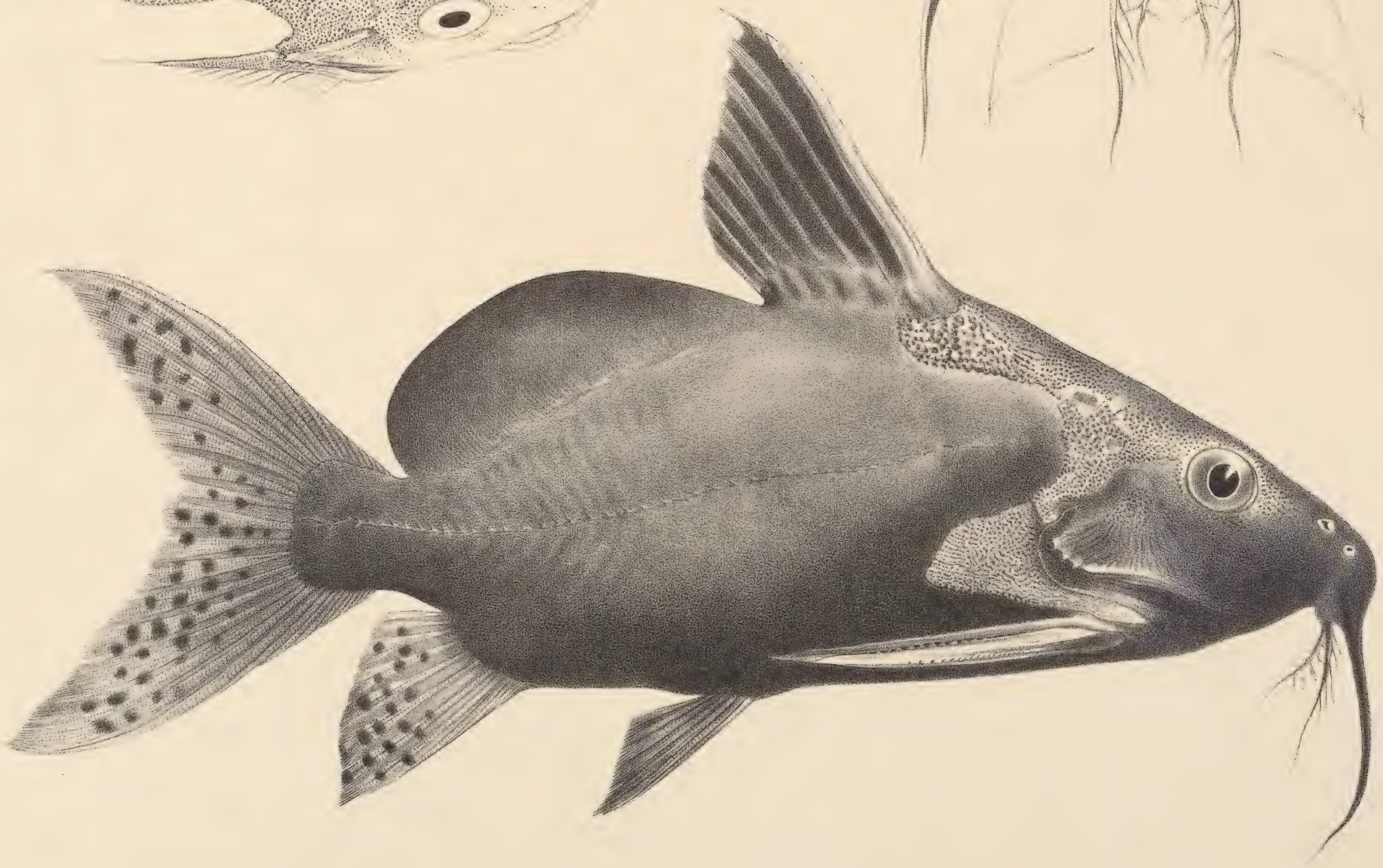
P. Smit del. et lith.

SYNODONTIS CLARIAS.

J. Green imp.



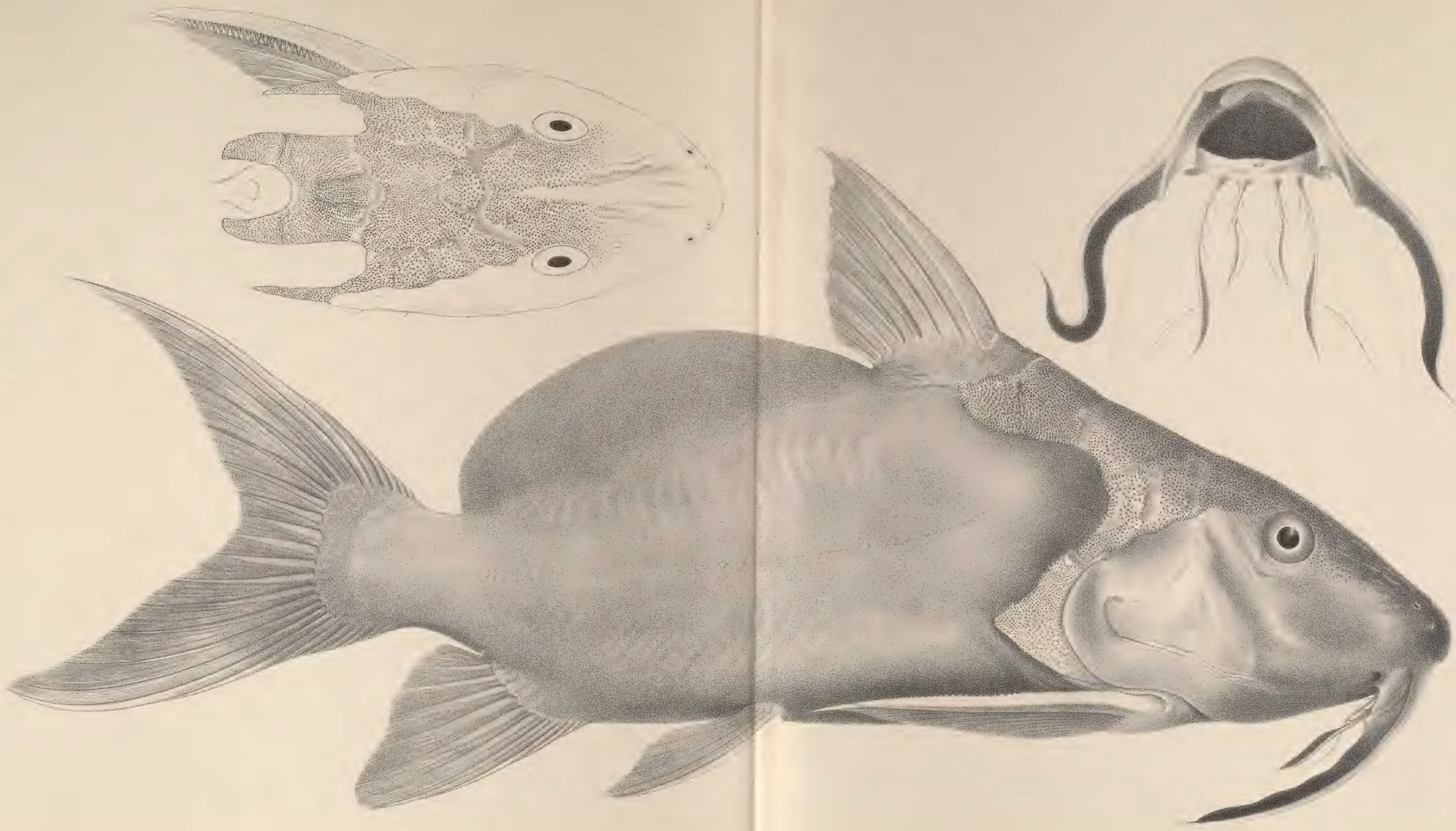




P. Smit del et lith.

SYNODONTIS BATENSODA.

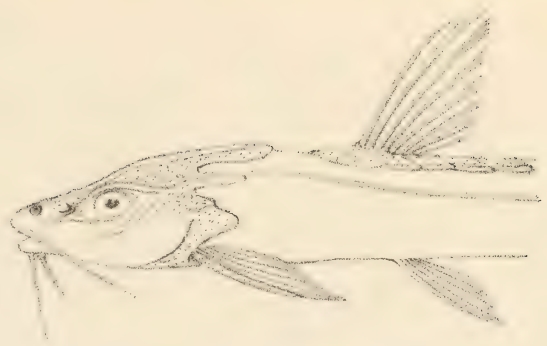
J. Green imp.



P. Smit del. et lith.

SYNODONTIS MEMBRANACEUS.

J. Green imp.



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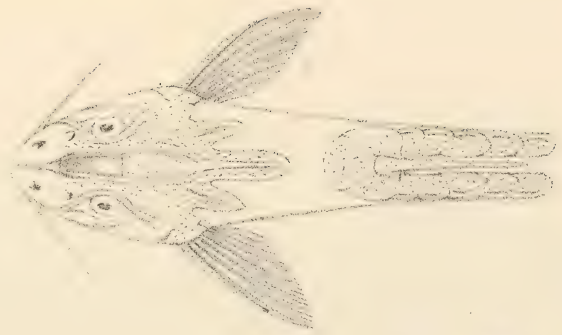
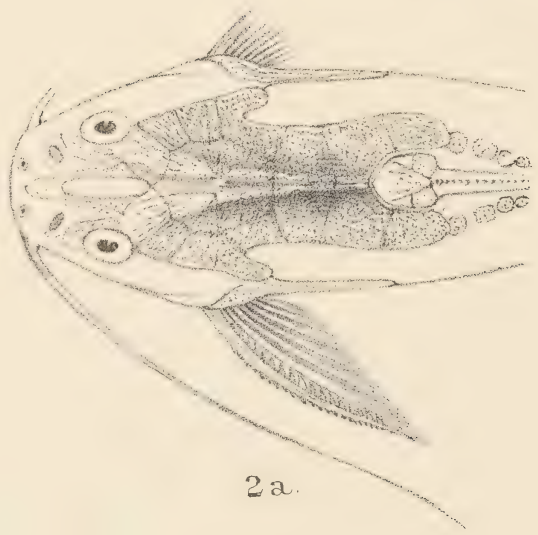


4b.

4c.

4.

1.



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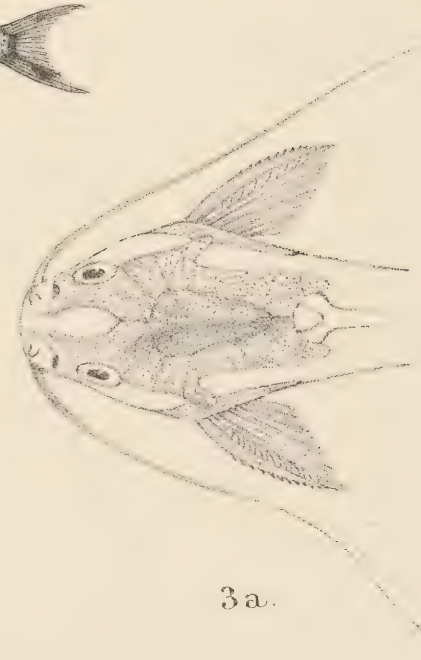

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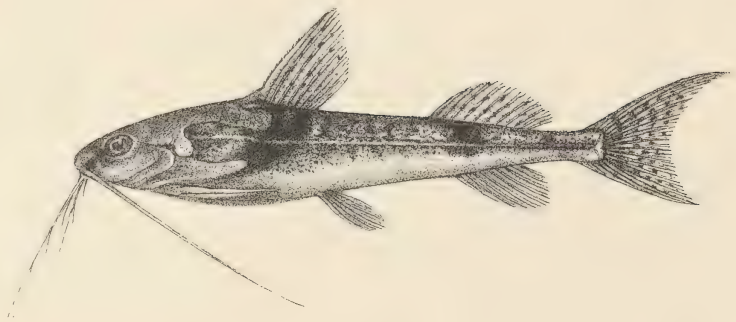

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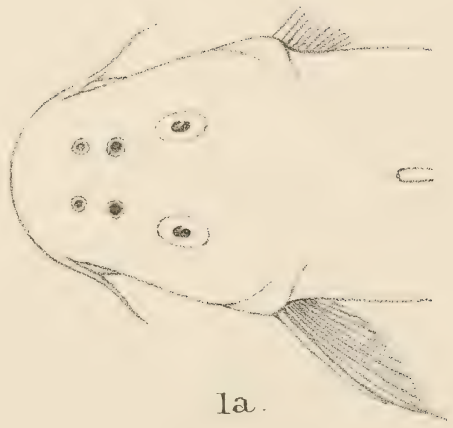

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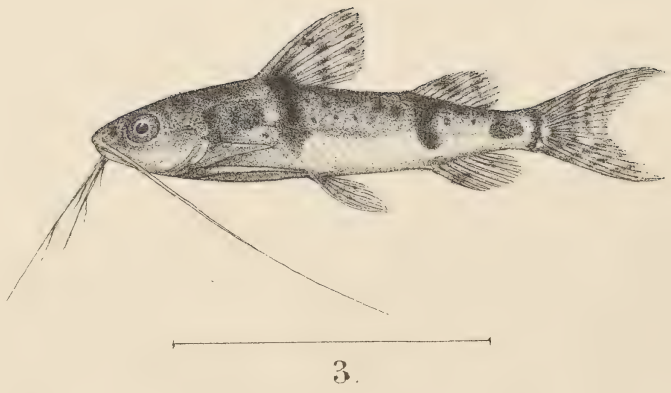


3.

J. Green del. et lith.

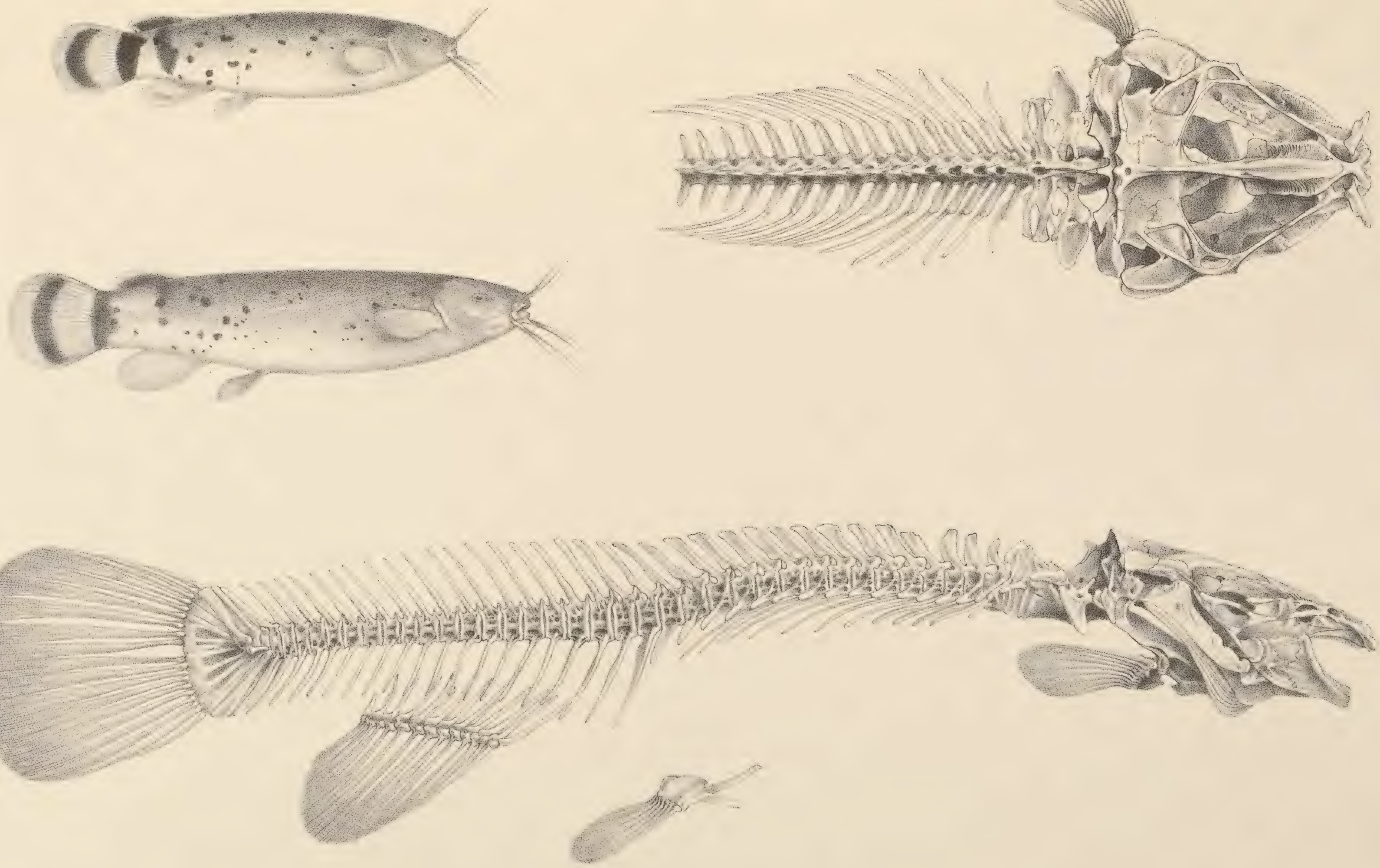
J. Green. imp.

1. CHILOGLANIS NILOTICUS. 2. MOCHOCUS NILOTICUS. 3. M. BREVIS. 4. ANDERSONIA LEPTURA.

P. Smit. del. et lith.

J. Green imp.

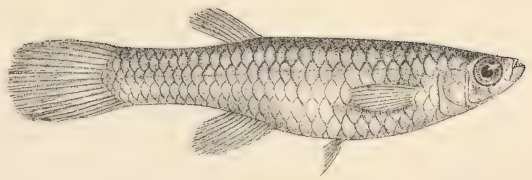
MALOPTERURUS ELECTRICUS.



J. Green del. et lith.

MALOPTERURUS ELECTRICUS.

J. Green imp.



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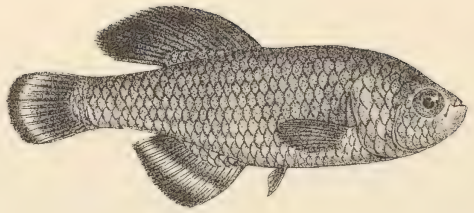

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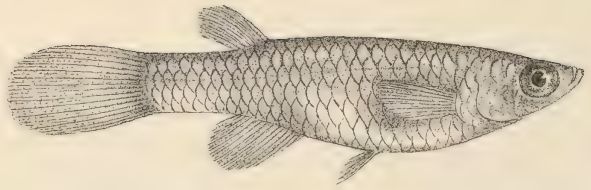

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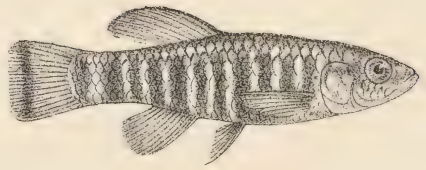

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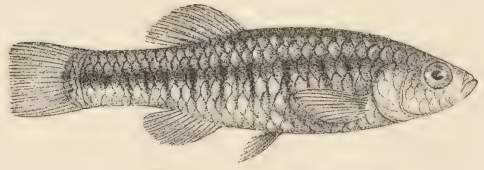

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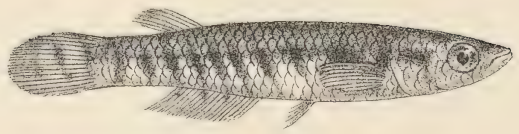
3.

4.



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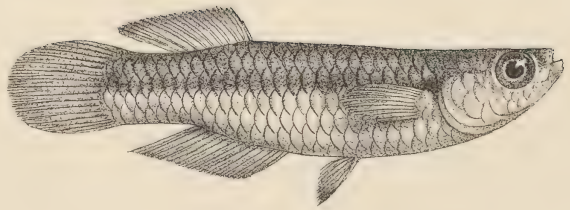
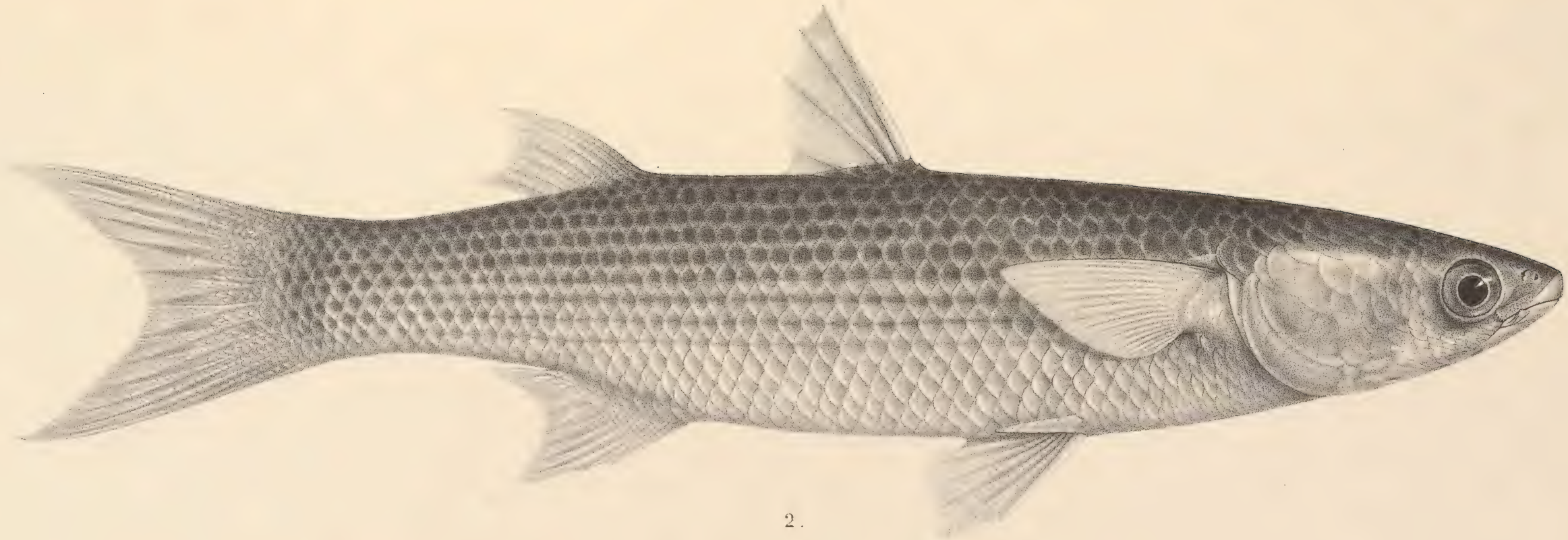


10.

J. Green del. et lith.

1, 2. CYPRINODON FASCIATUS 3, 4. C. DISPAR. 5. FUNDULUS TÆNIOPYGUS.
6. HAPLOCHILUS SCHOELLERI. 7. H. LOATI. 8. H. MARNI. 9. H. BIFASCIATUS. 10. H. PUMILUS.

J. Green imp.



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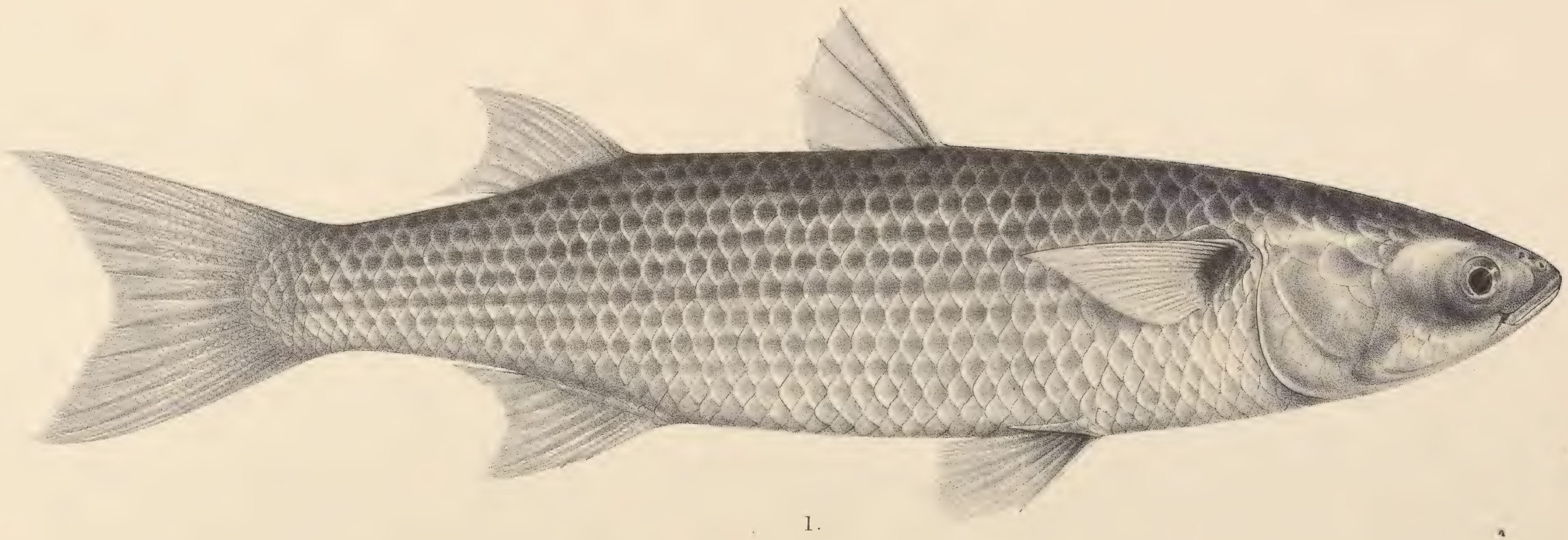
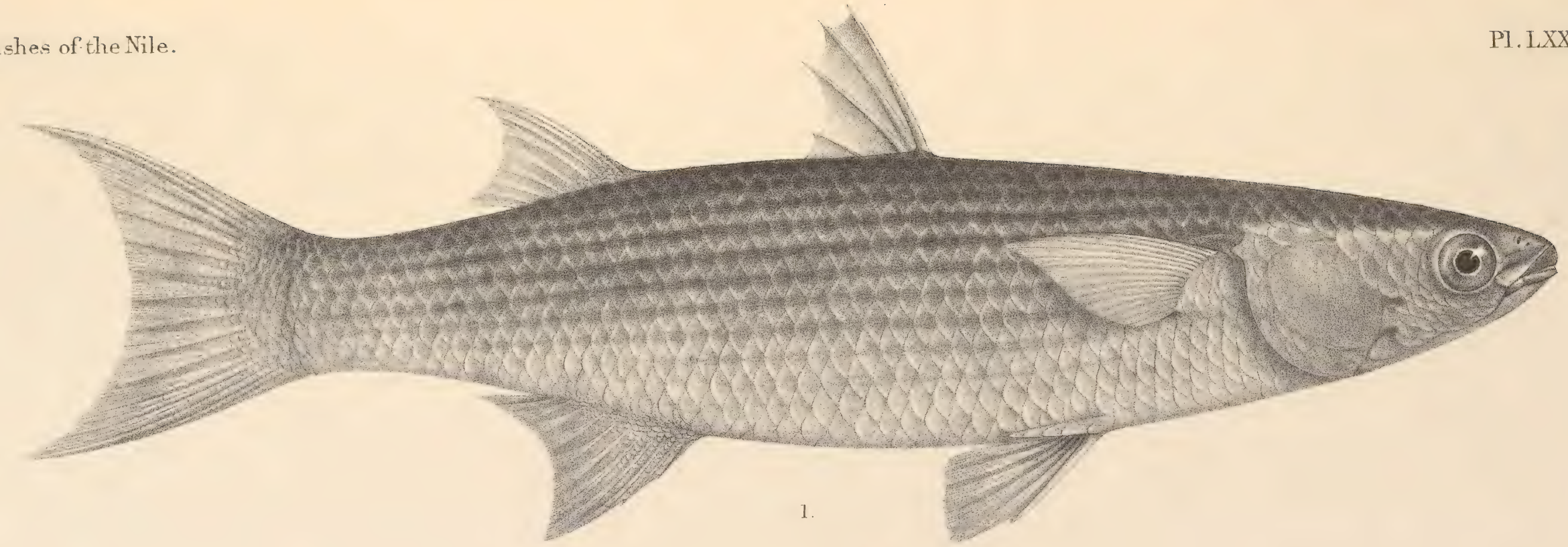


1.

J. Green del. et lith.

J. Green imp.

1. MUGIL CEPHALUS. 2. M. CAPITO.



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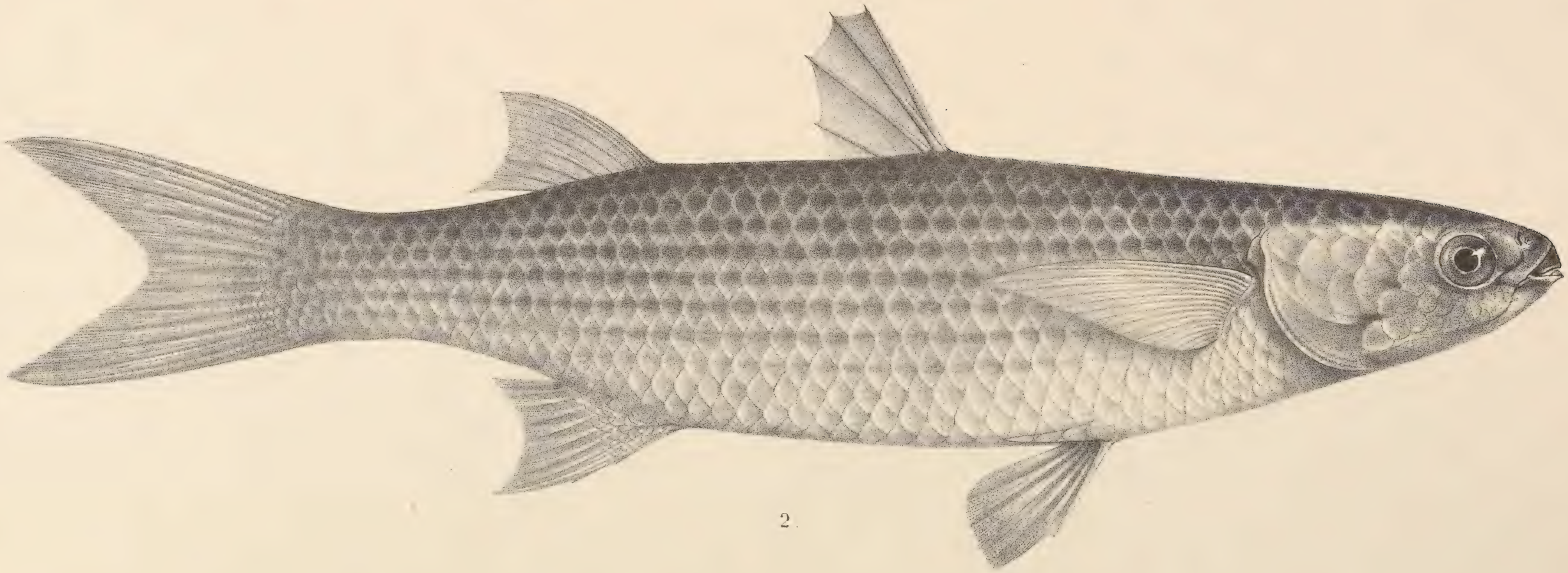
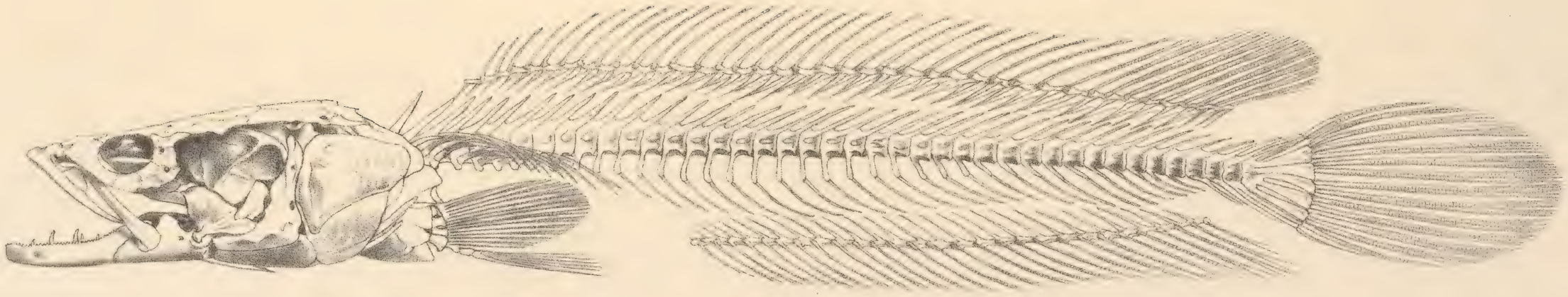


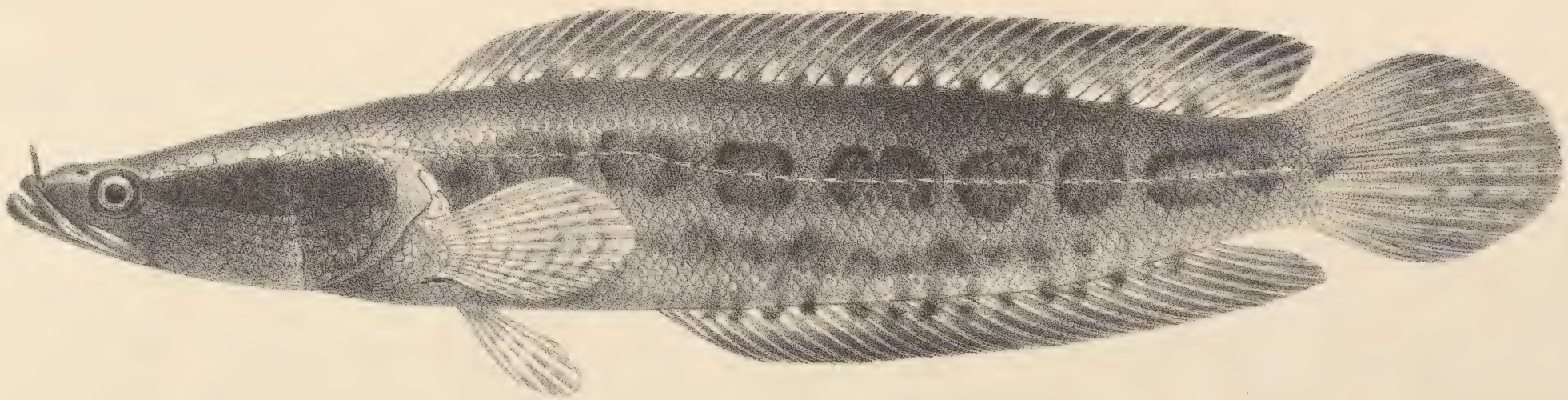
2.

J. Green del. et lith.

1. MUGIL CAPITO. 2. M. AURATUS.

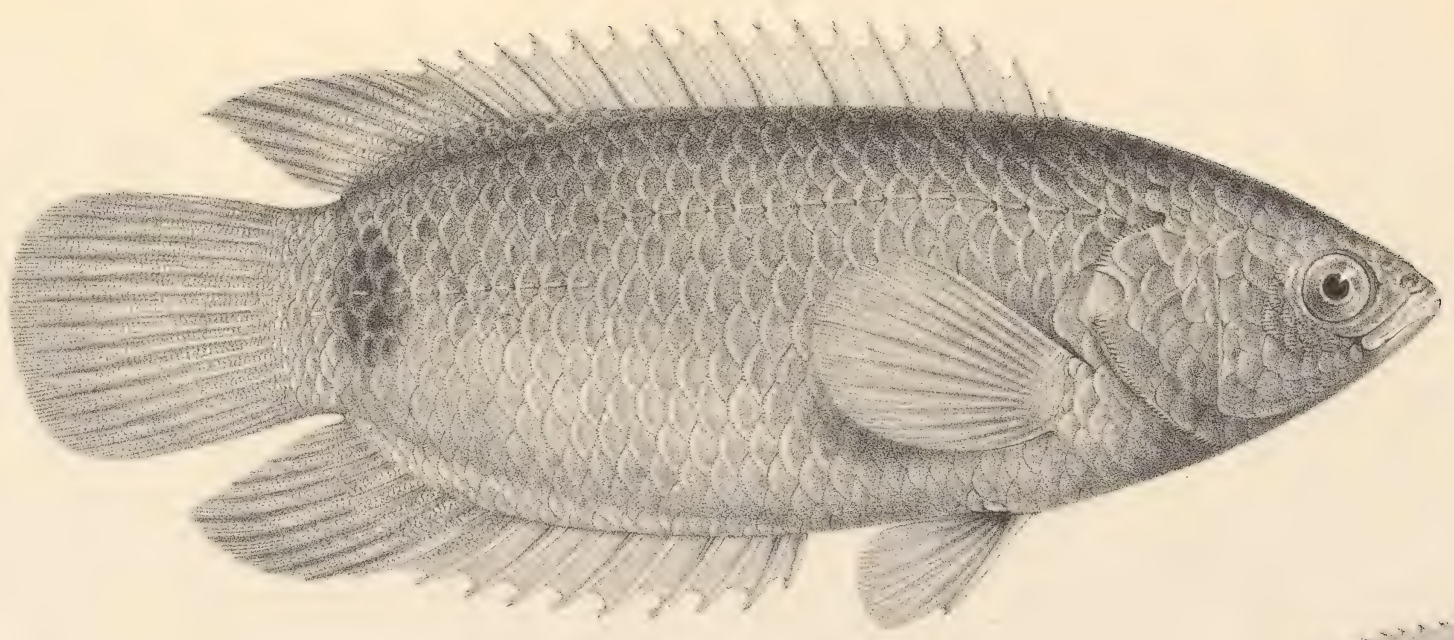
J. Green imp.





P. Smit del. et lith. J. Green imp.

OPHIOCEPHALUS OBSCURUS.



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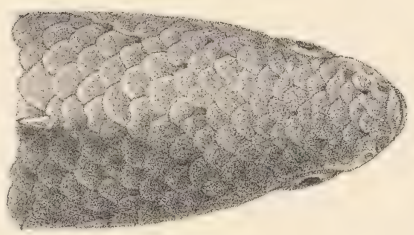

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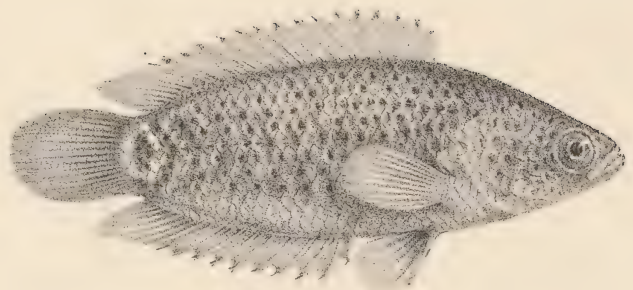

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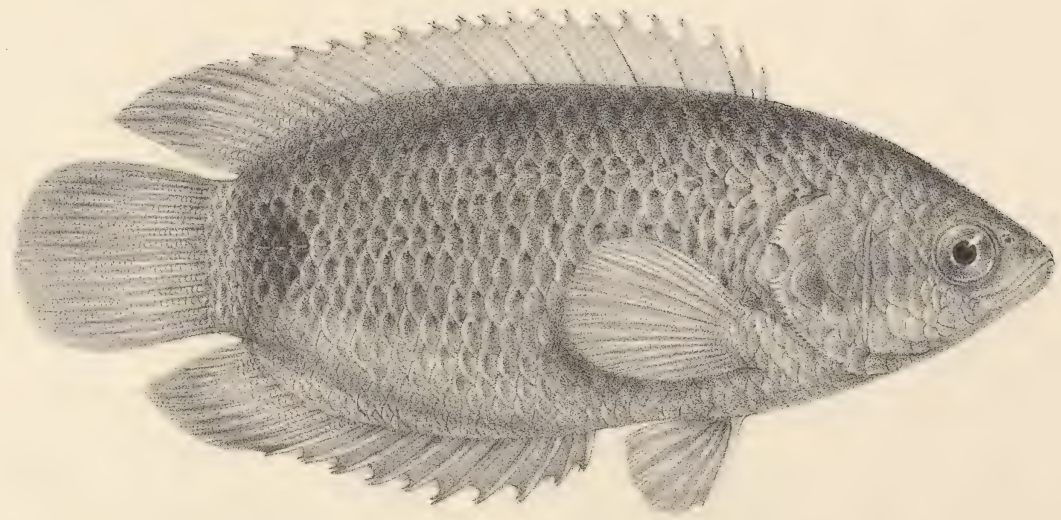
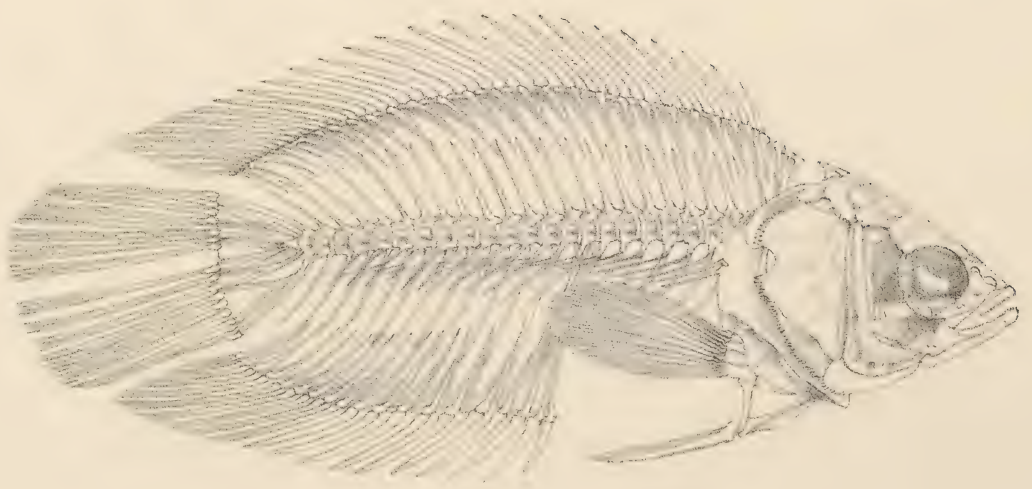


c.

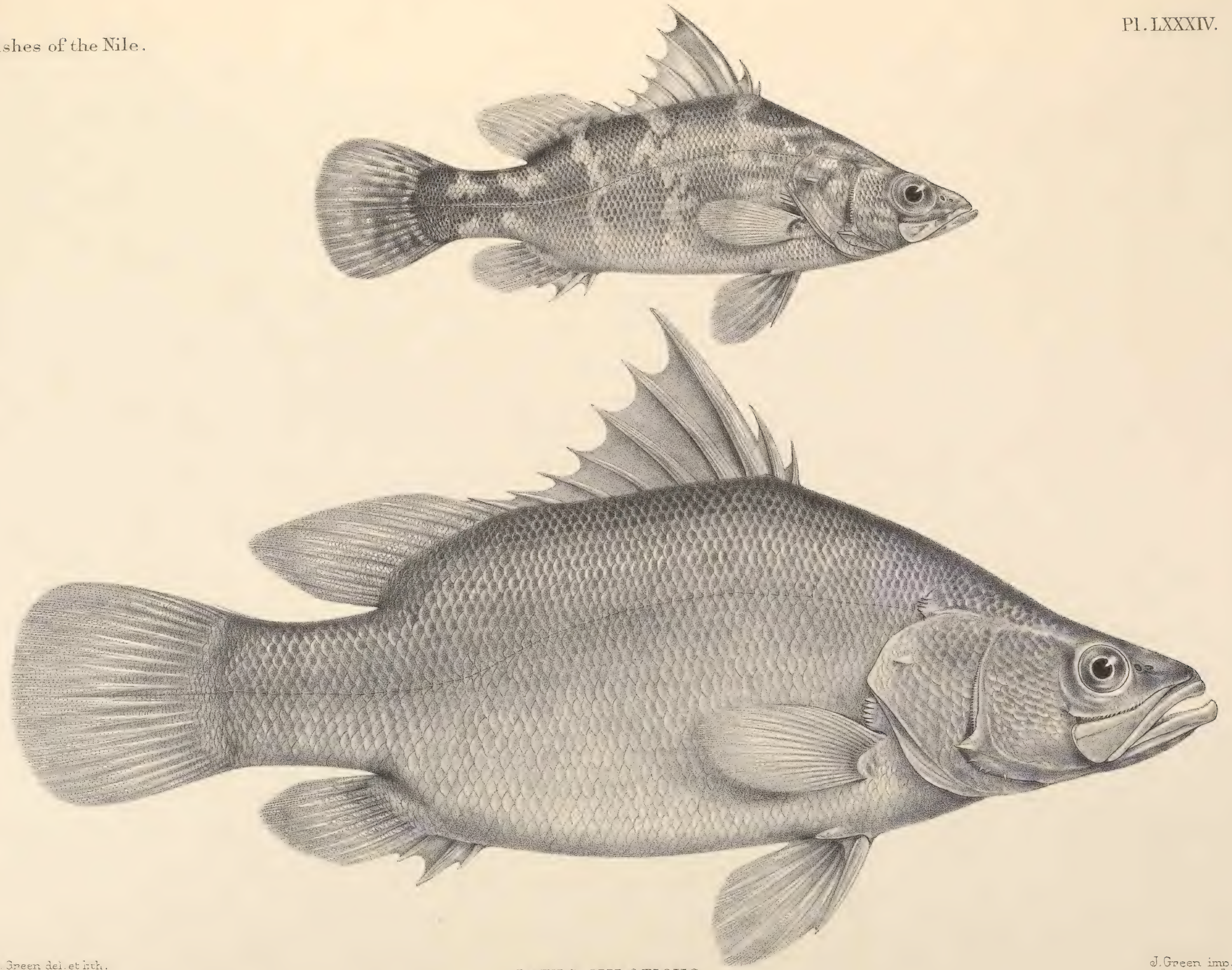


e.

J. Green del. et lith.

J. Green imp.

1. ANABAS PETHERICI. 2. A. MURIEI.



J. Green del. et lith.

LATES NILOTICUS.

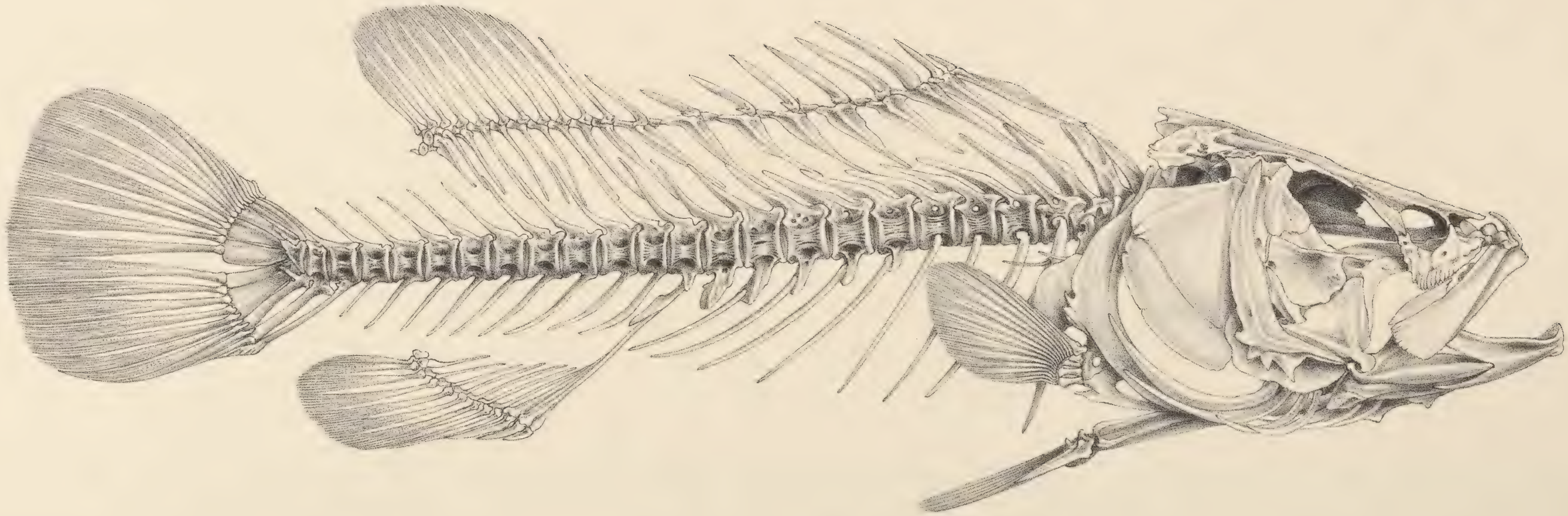
J. Green imp.

a.

b.

c.

e.



d.

J. Green del. et lith.

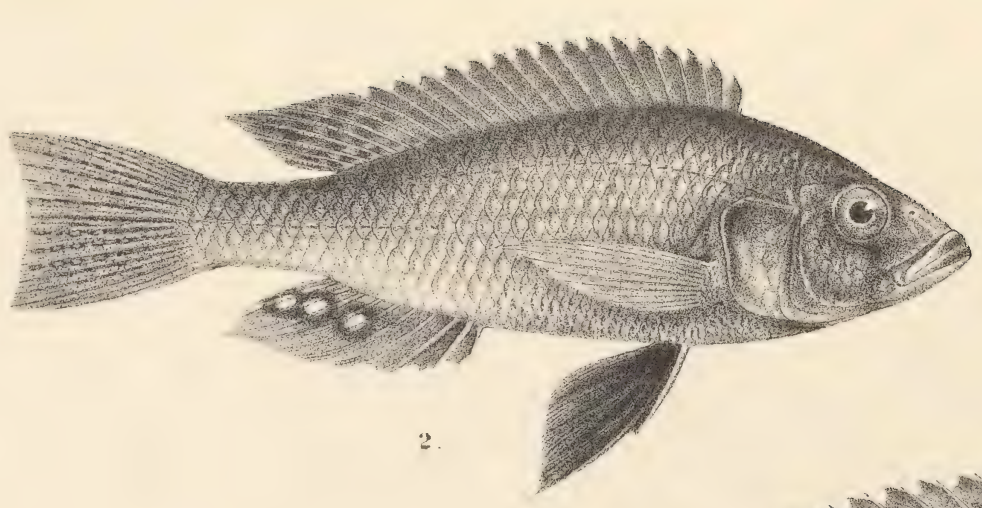
J. Green imp.

LATES NILOTICUS.

J. Green del. et lith.

J. Green imp.

1. HEMICHROMIS BIMACULATUS. 2. PARATILAPIA LONGIROSTRIS. 3. P. PROGNATHA. 4. P. CINEREA.



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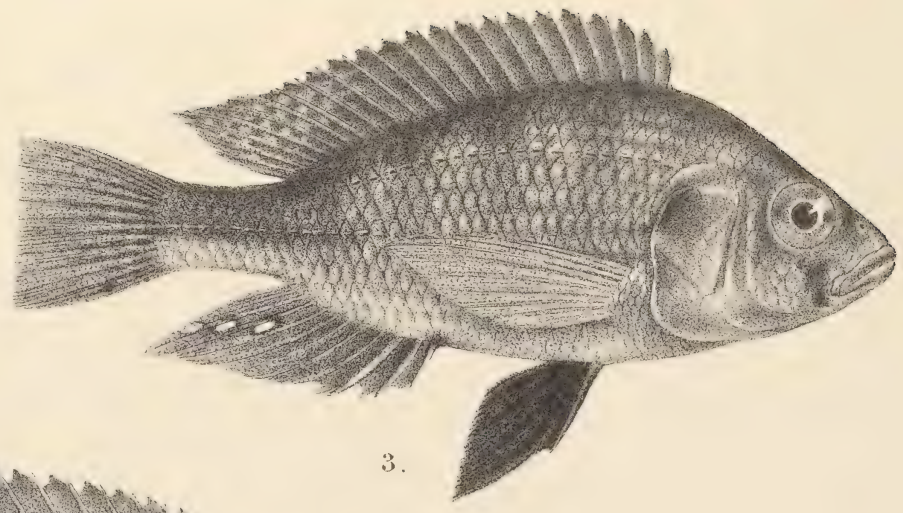

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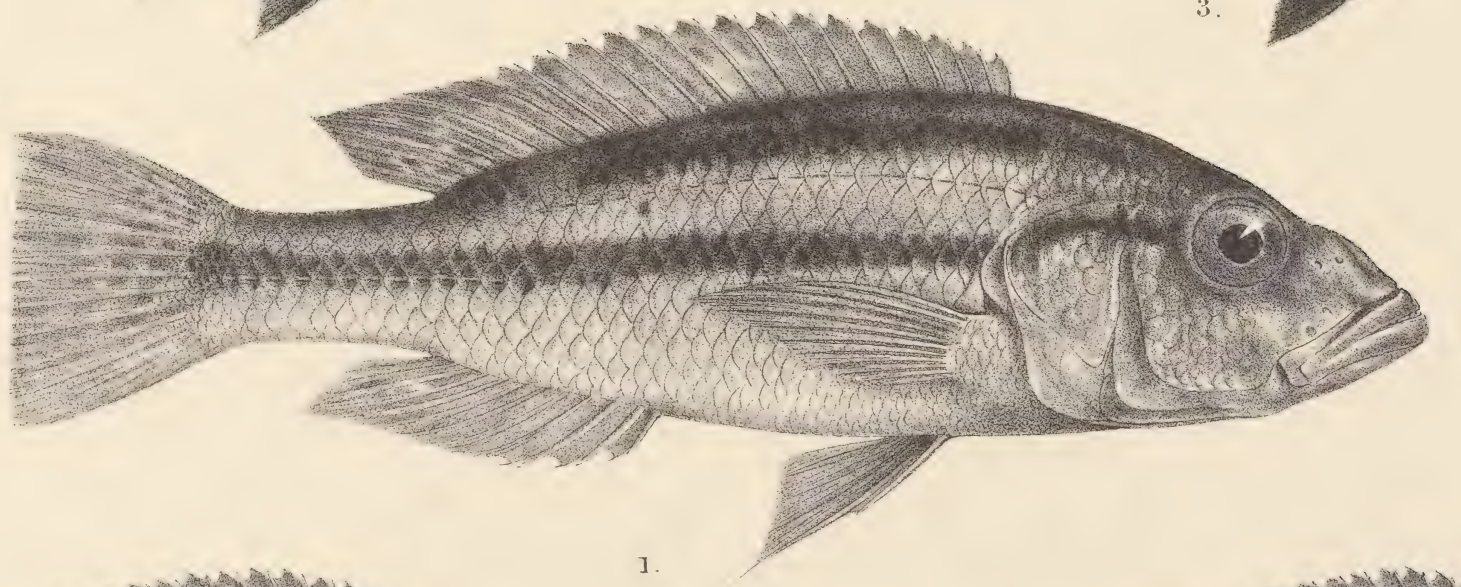

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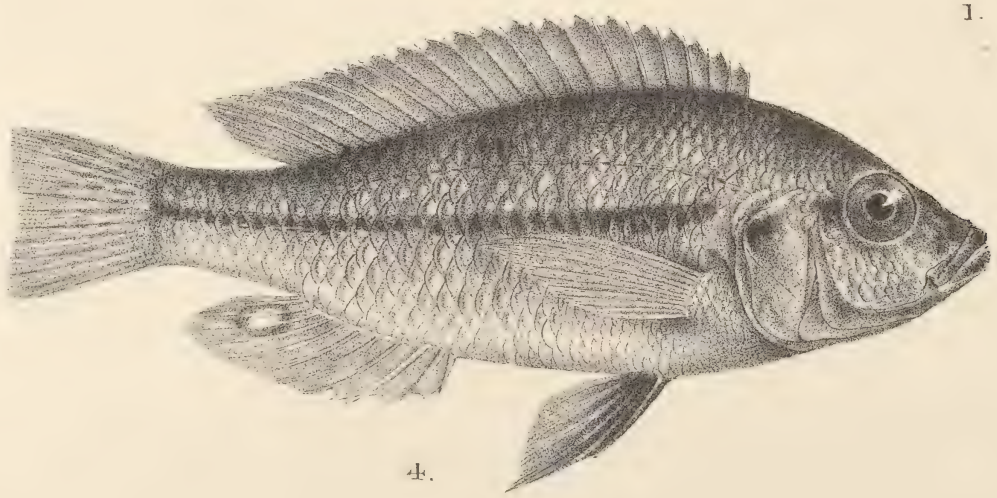

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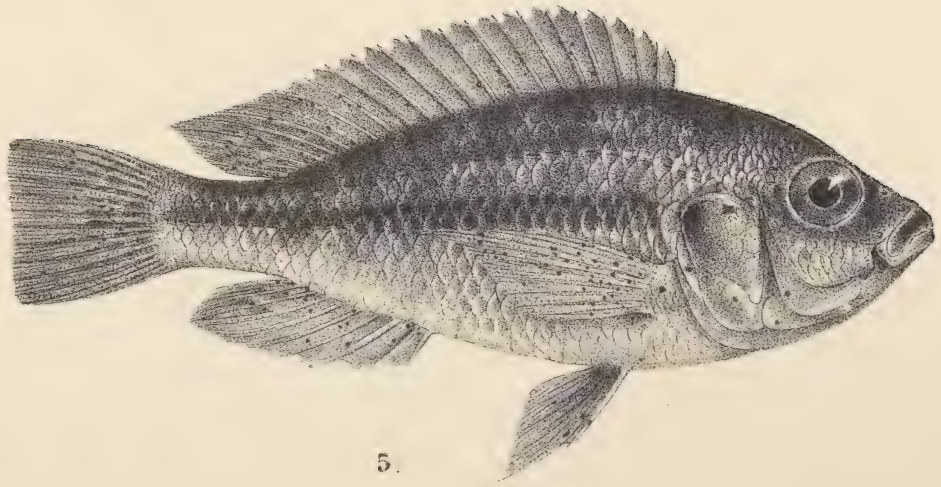

5.

J. Green del. et lith.

J. Green imp.

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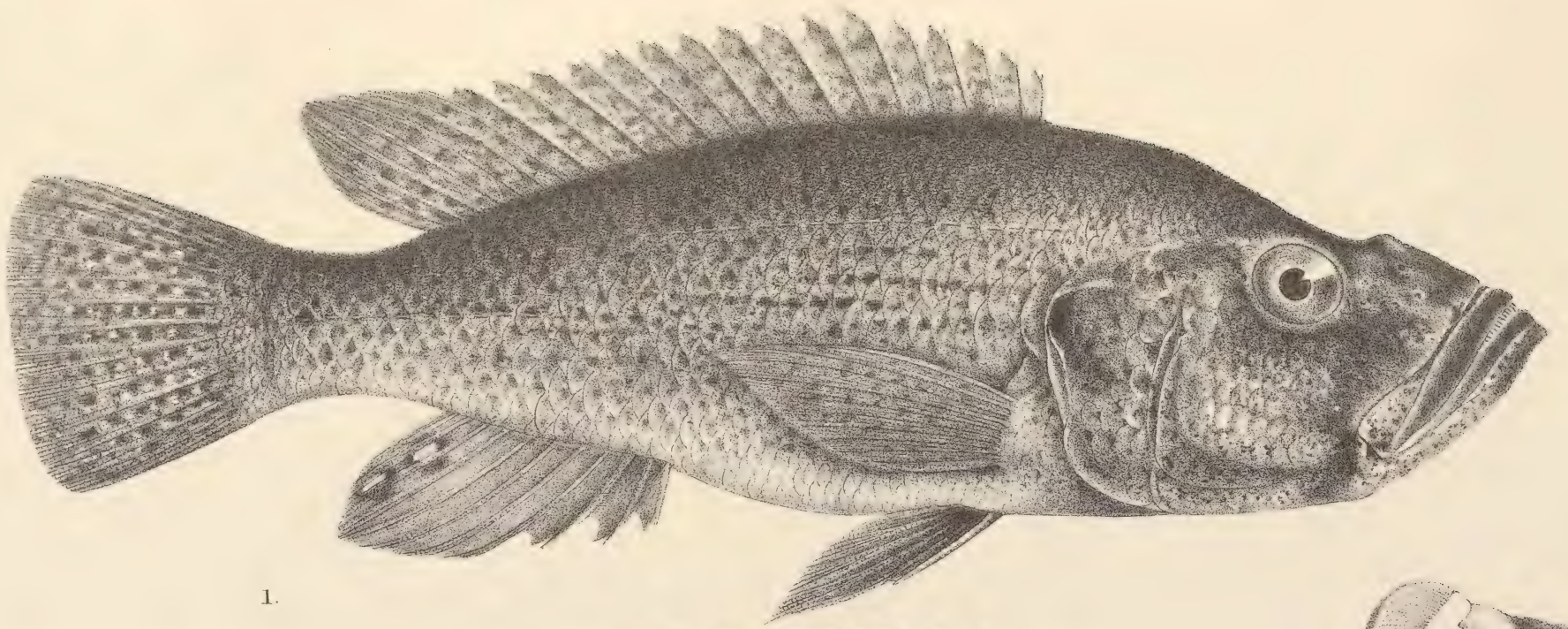

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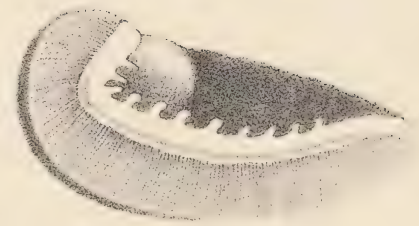

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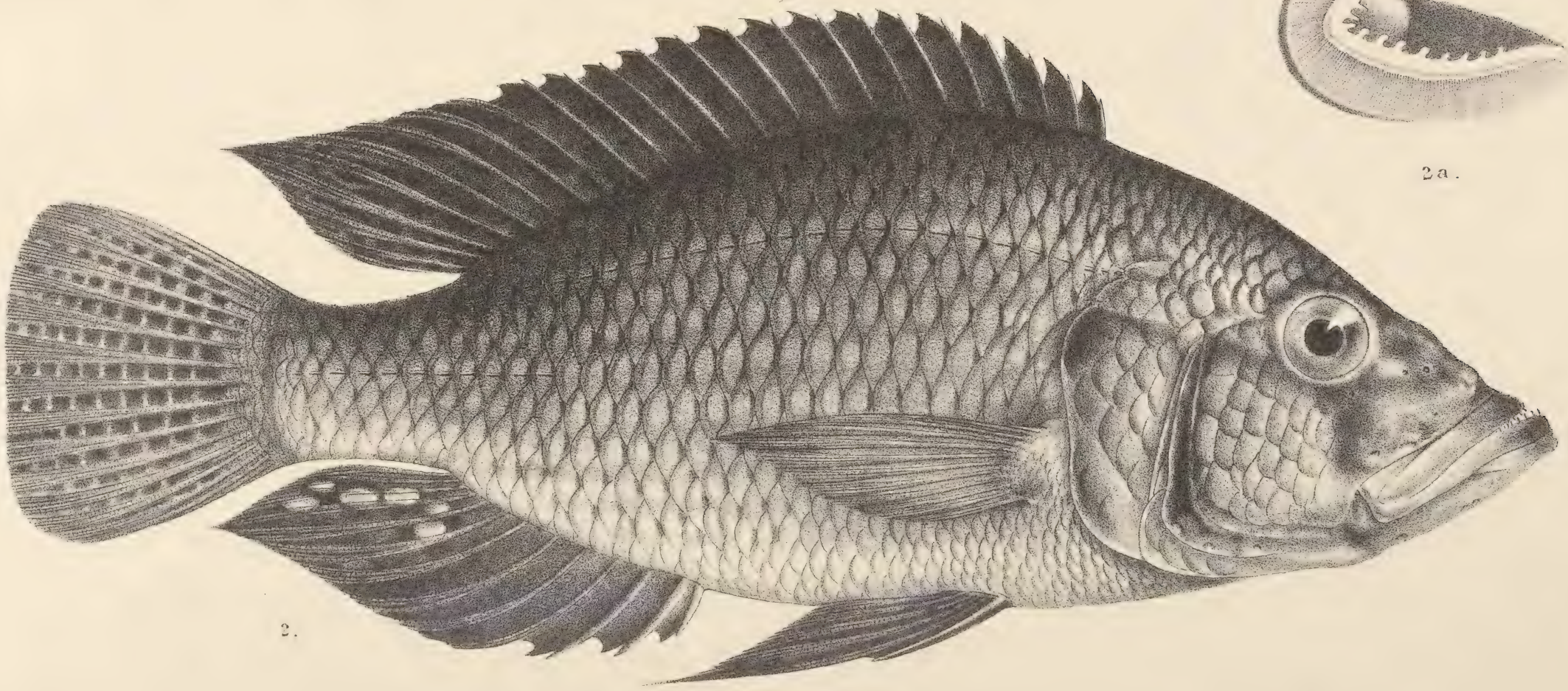

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J. Green del. et lith.

J. Unger imp.

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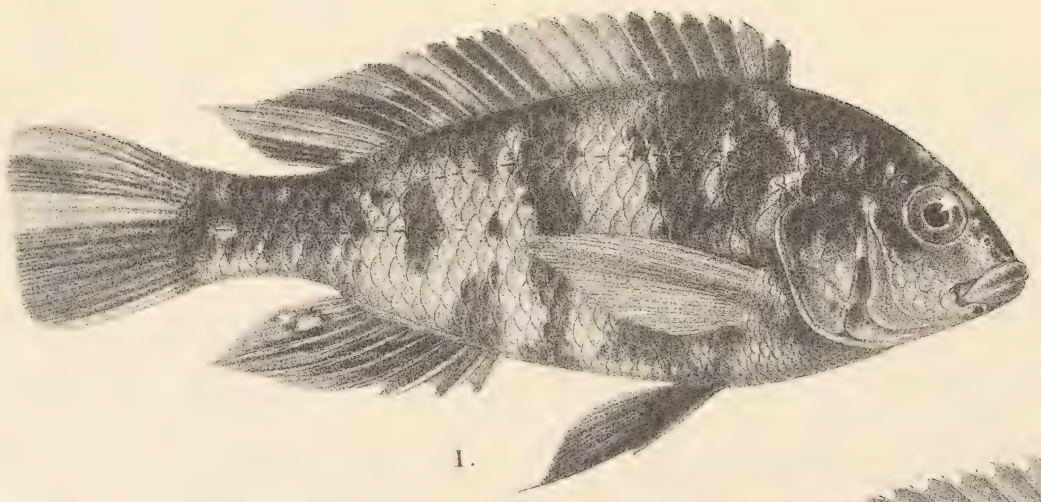

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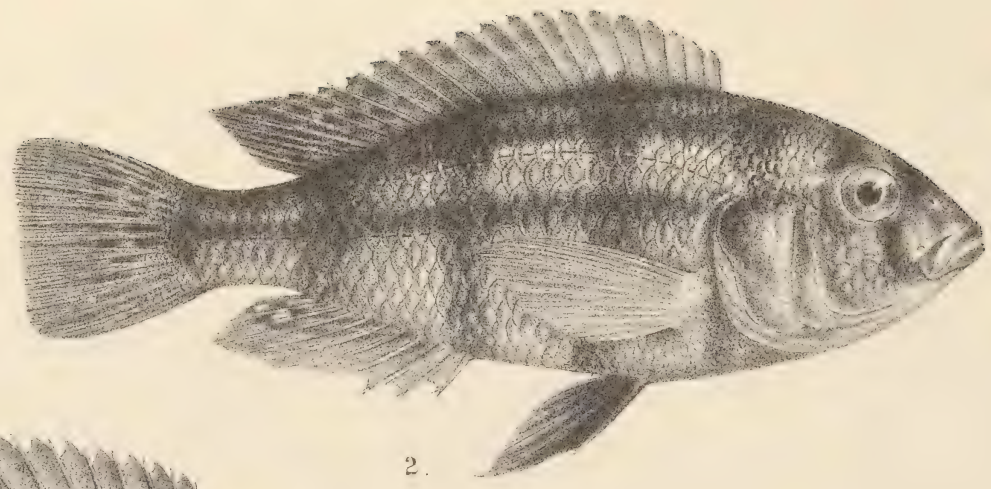

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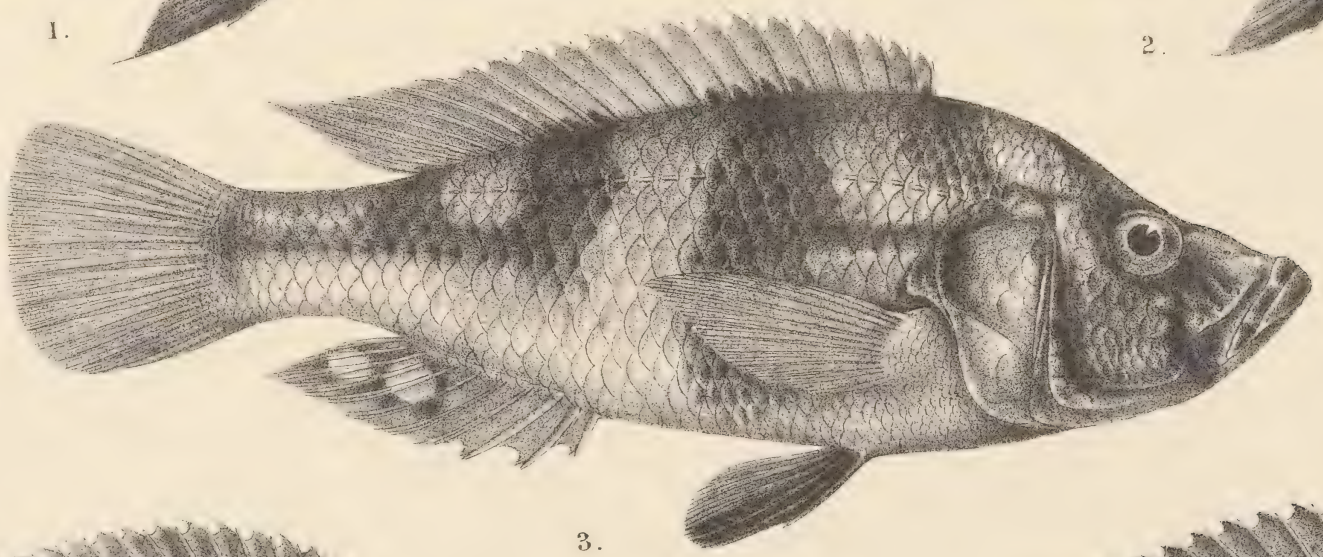

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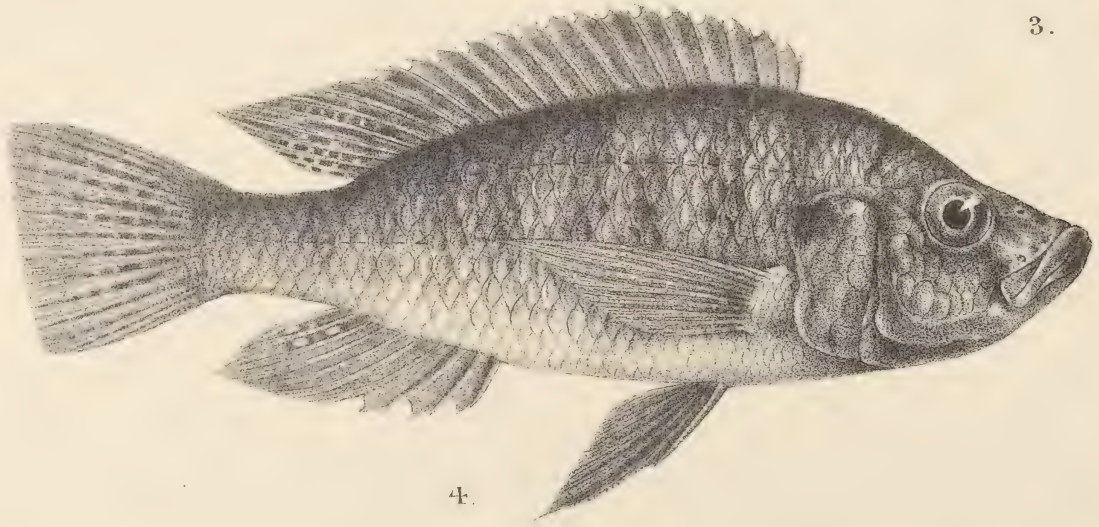

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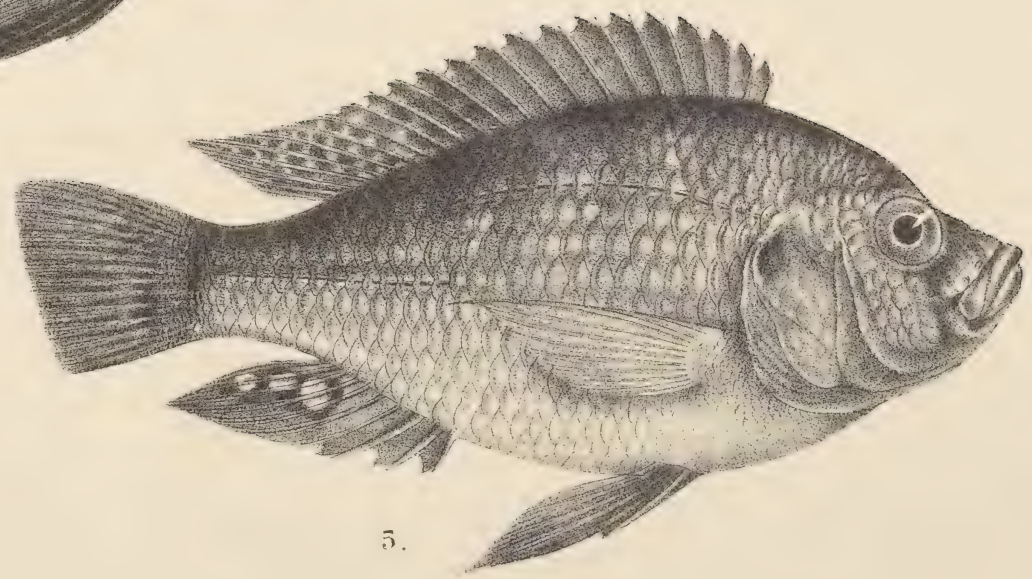

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J. Green del. et lith.

J. Green imp.

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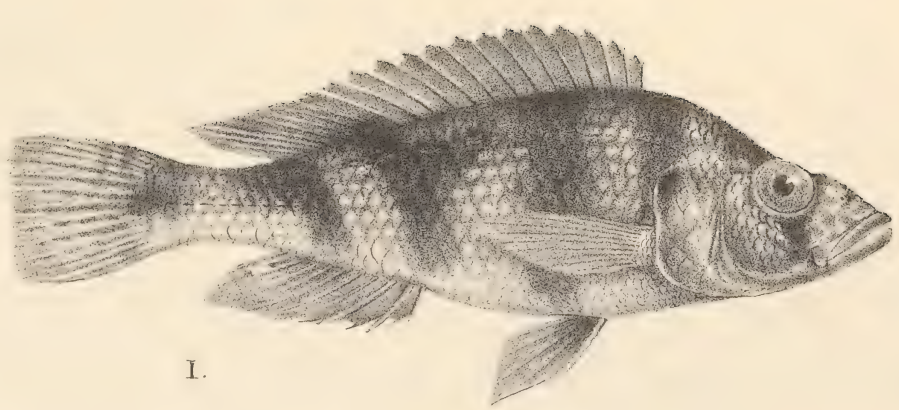

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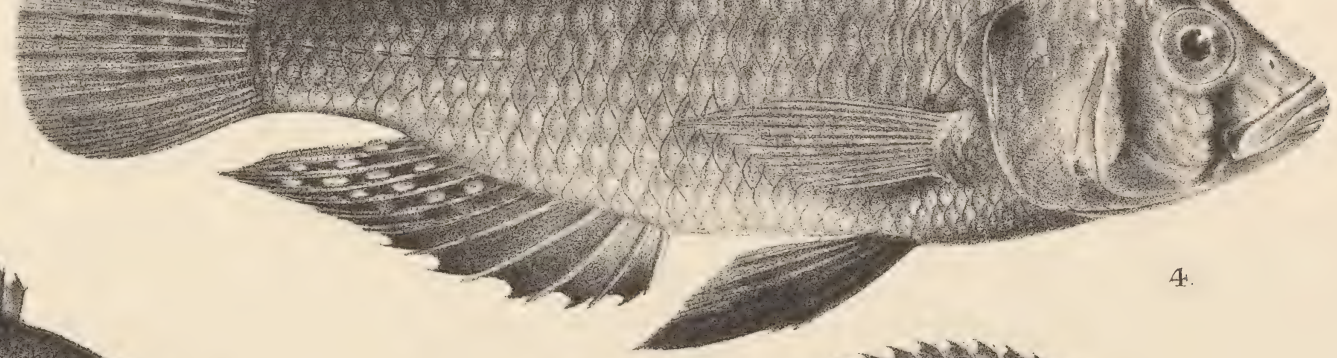

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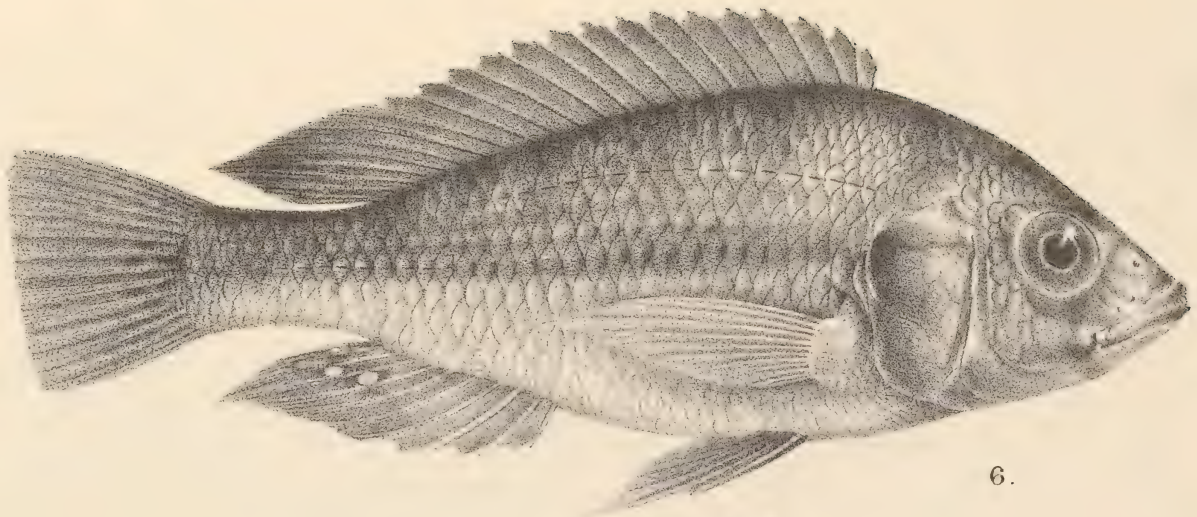

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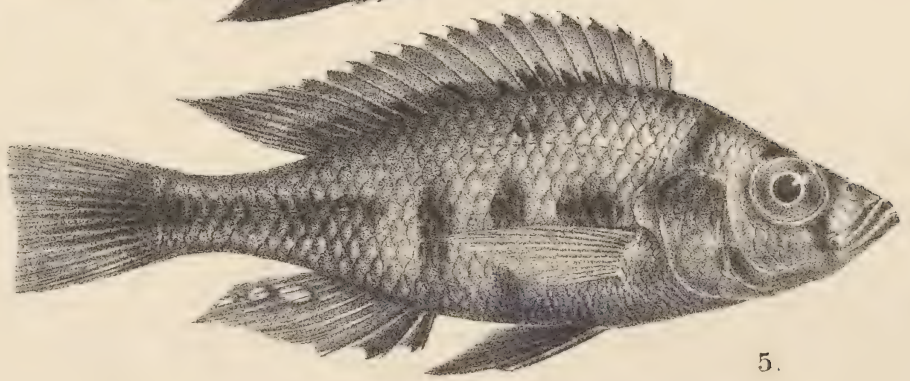

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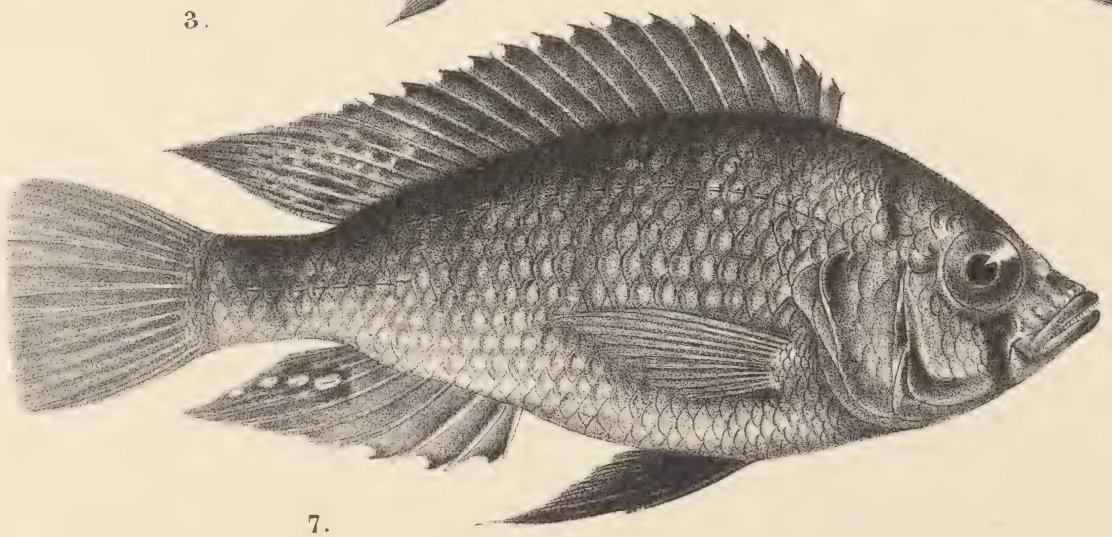

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J. Green del. et lith.

J. Green imp.

1. HAPLOCHROMIS PERCOIDES. 2. H. STRIGIGENA. 3. H. DESFONTAINESI. 4. H. ALLUAUDI.
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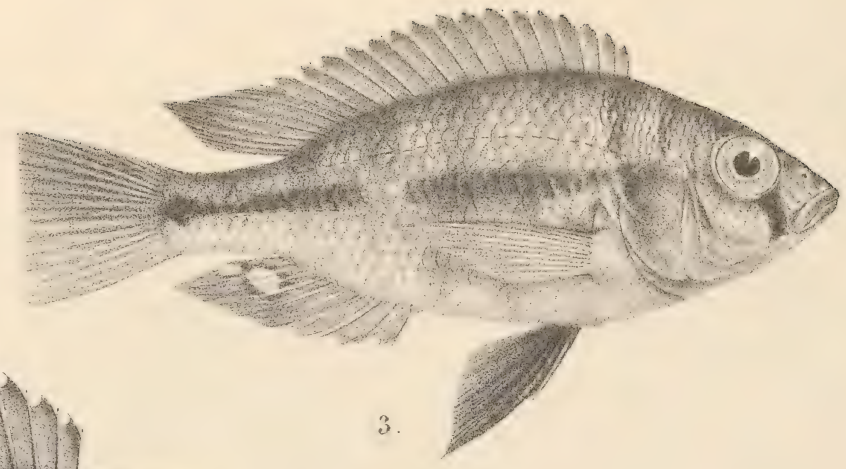

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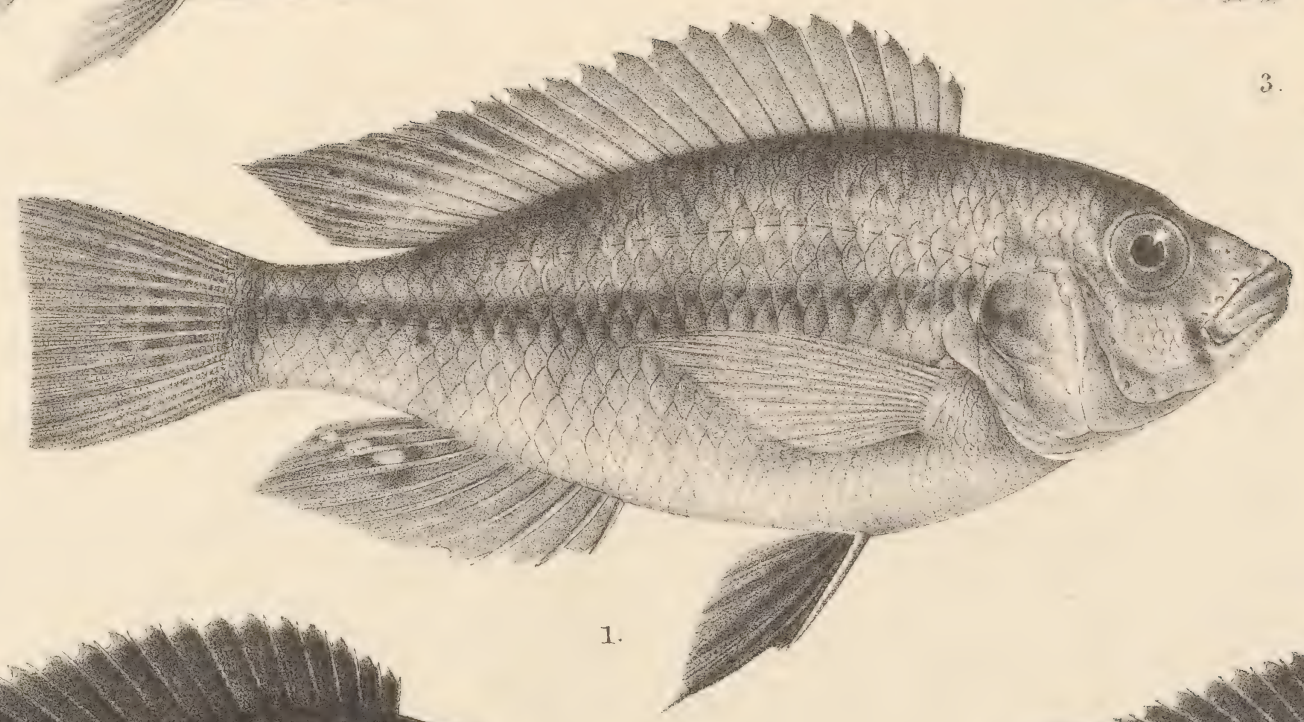

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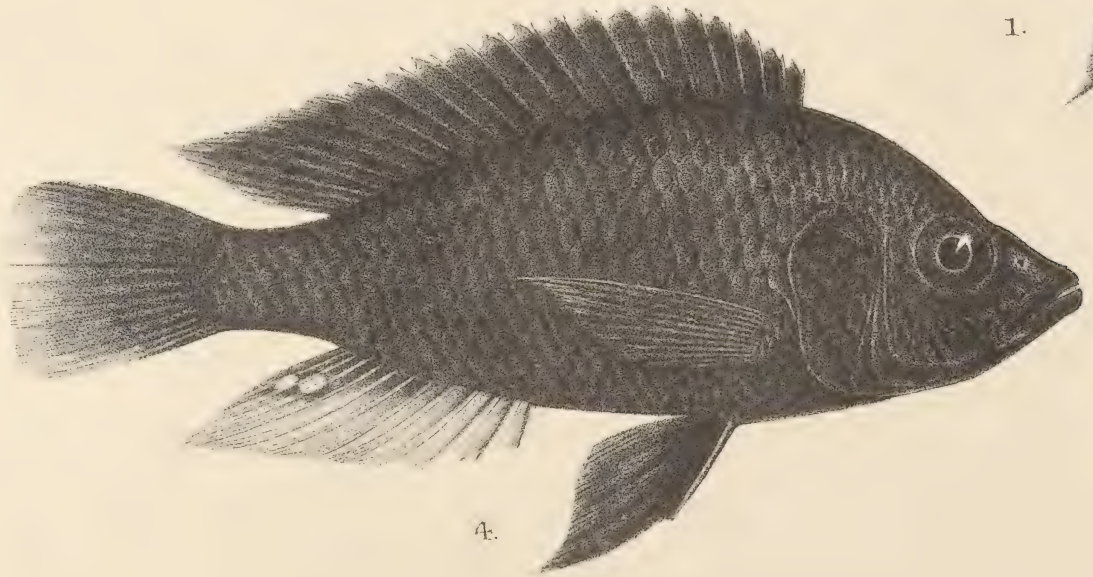

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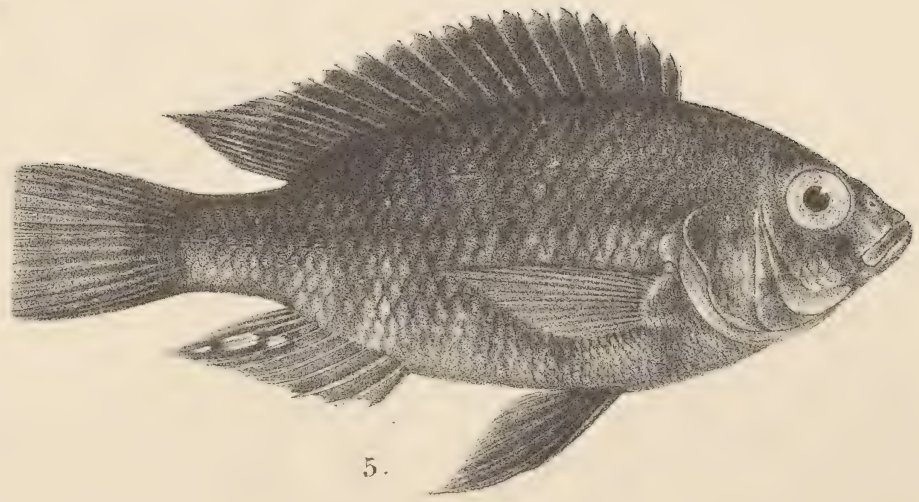

5.

J. Green del. et lith.

J. Green imp.

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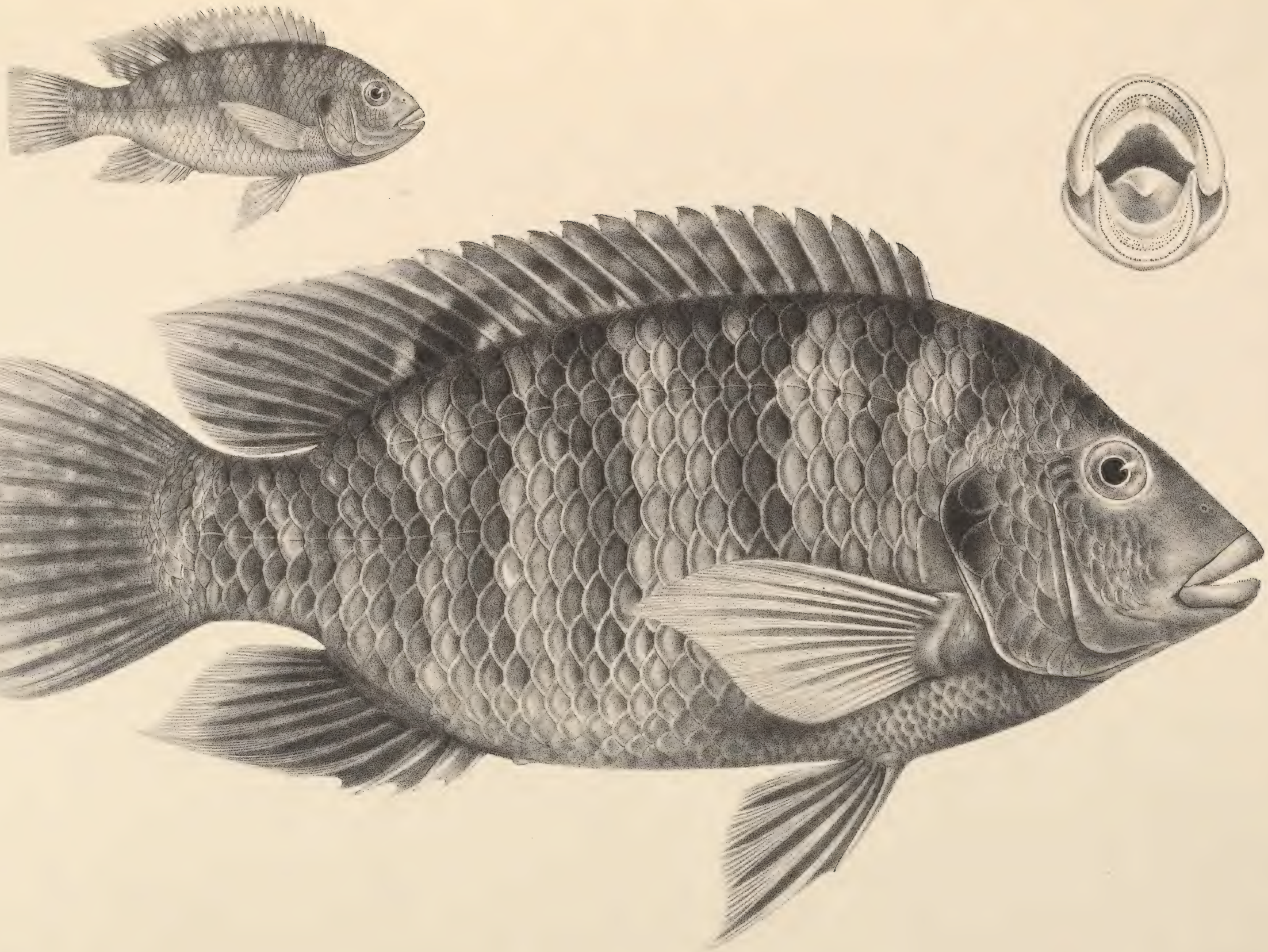
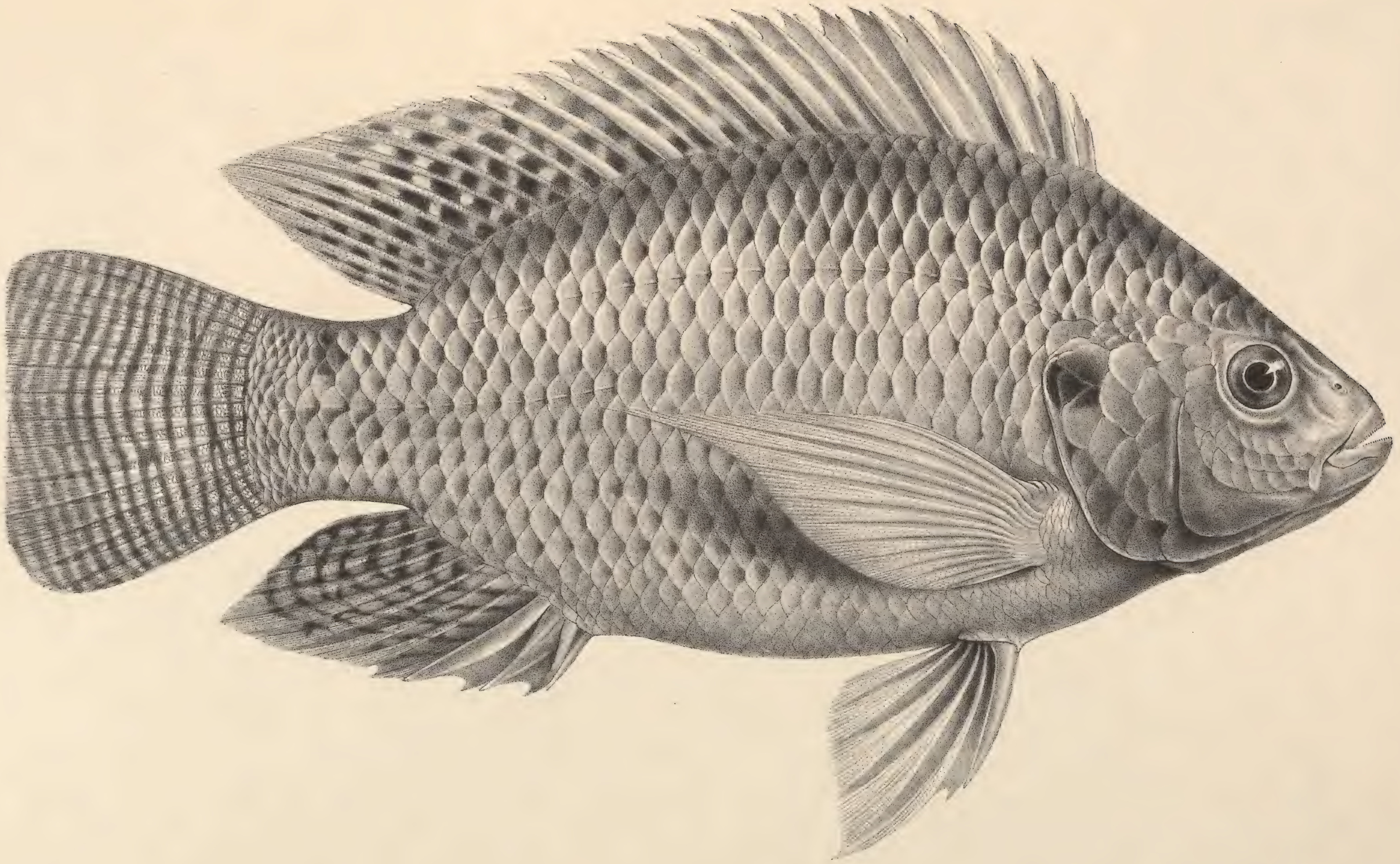


J. Green del. et lith.

J. Green imp.

TILAPIA ZILLII.



J. Green del et lith.

TILAPIA NILOTICA.

J. Green imp.

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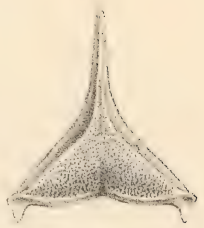

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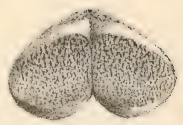

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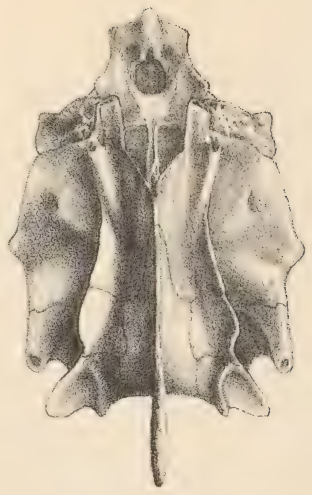

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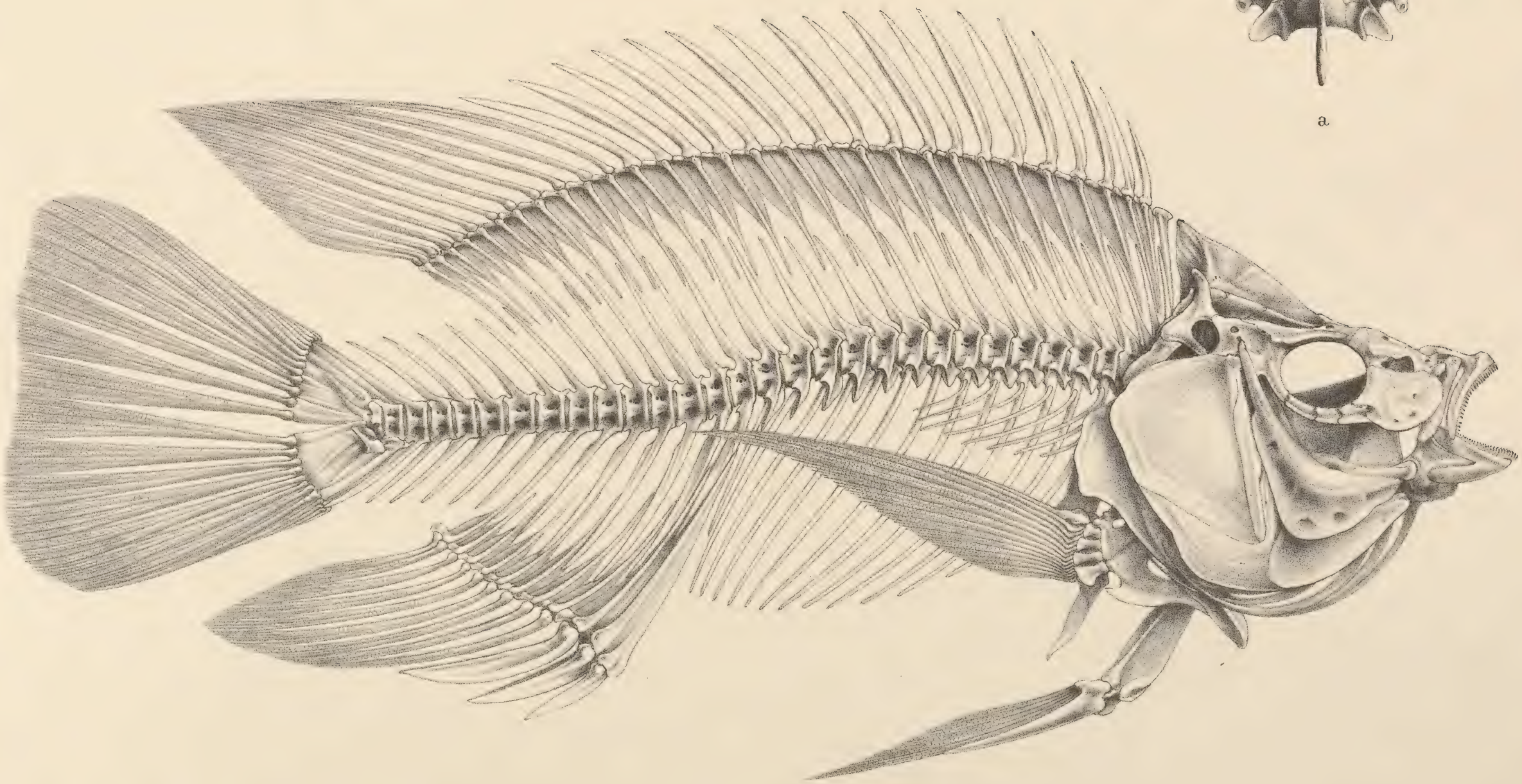

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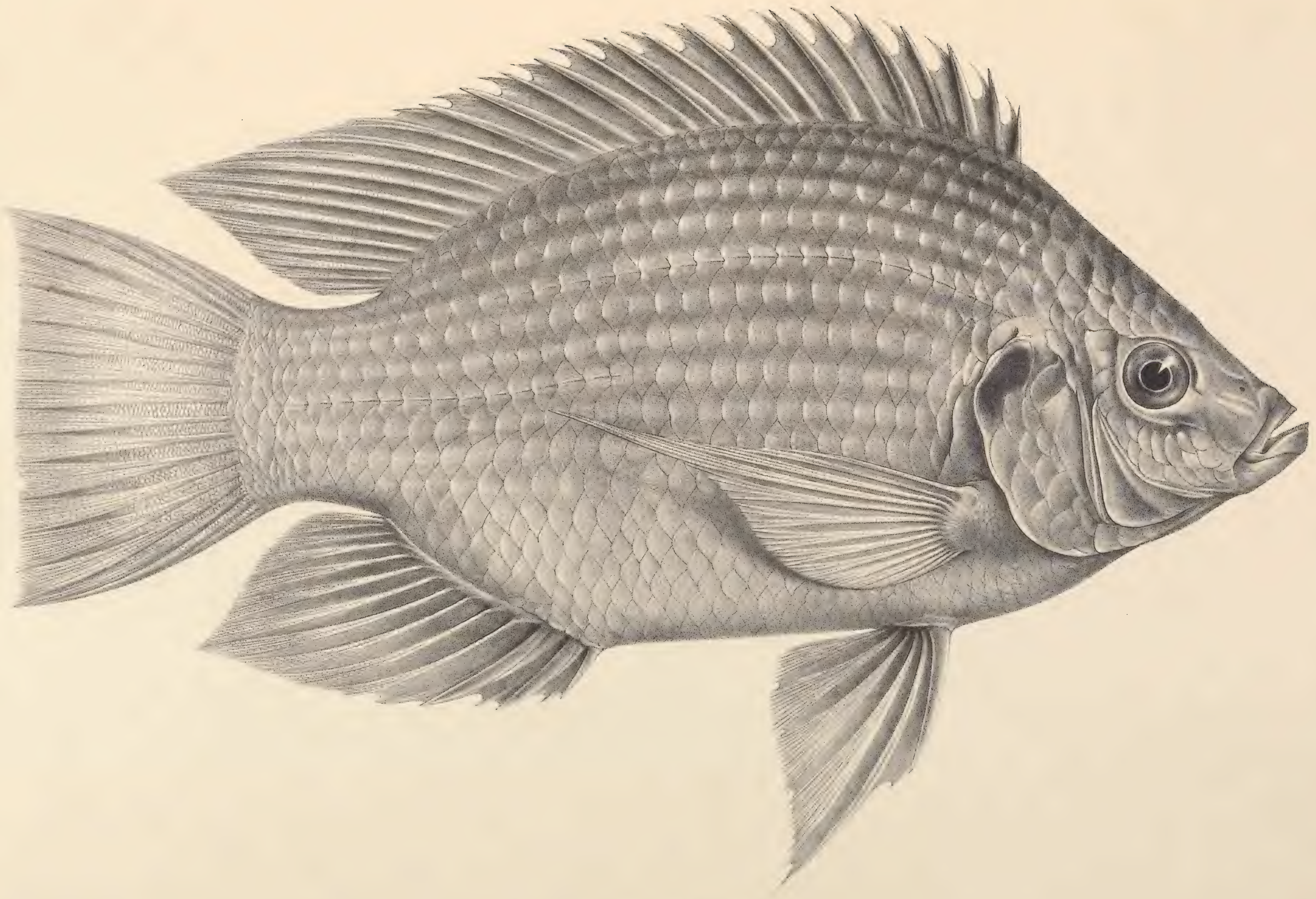

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PETROCHROMIS ANDERSONII.

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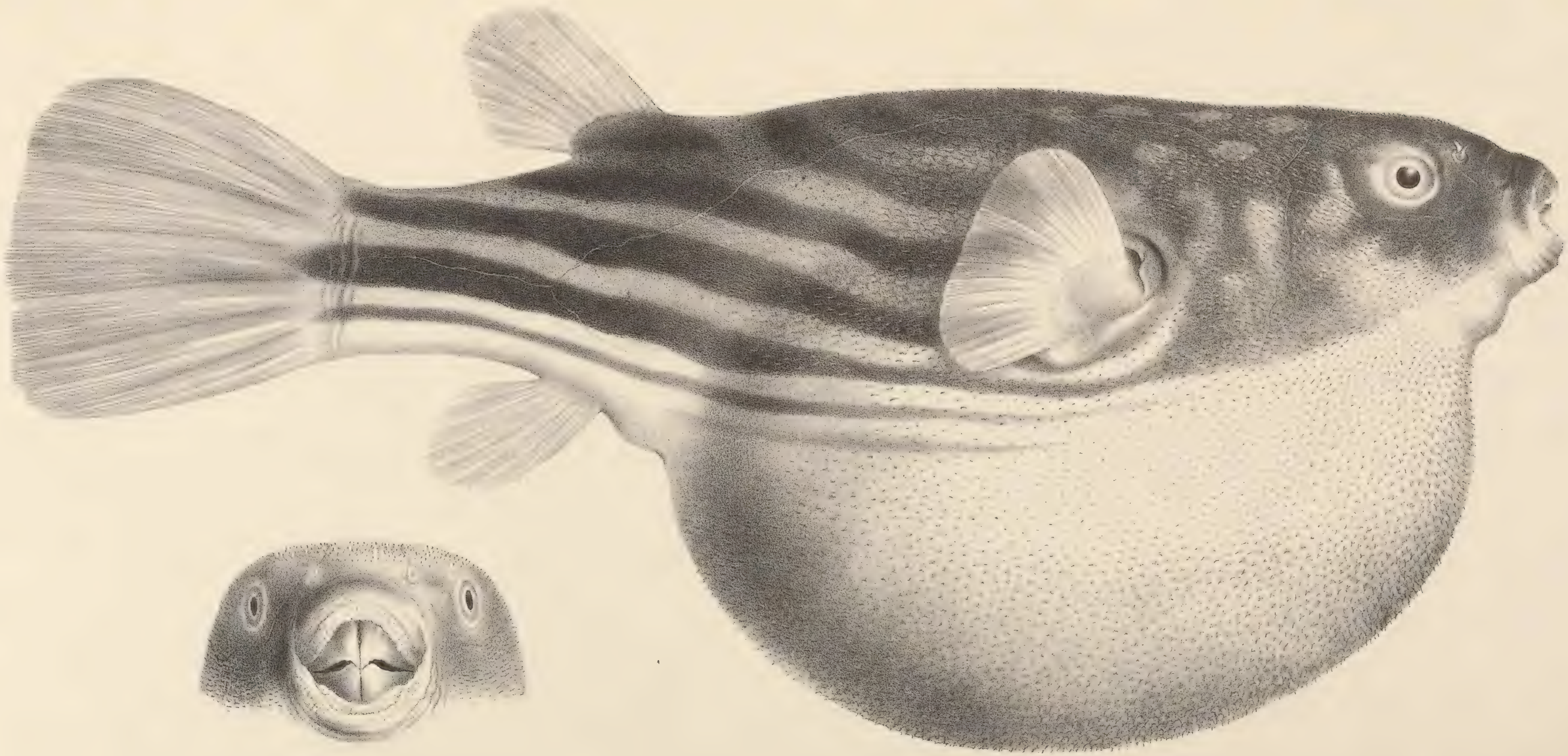

P. Smit del. et lith. J. Green imp.

TETRODON FAHAKA.

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